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ABSTRACT

Compared were the attainments and other characteristics of 73 gifted and 64 average-bright control primary school children, selected on the basis of a Stanford-Binet Intelligence Scale score of 140 and over, and 130 and under; and also of two subgroups obtaining IQ 160 and over, and 120 and under. Questionnaires were designed for and completed by the sample pupils, their parents, and teachers in respect of physical, educational, and social development, and home interests. A fourth questionnaire, requesting the views of 149 Head Teachers of primary schools on the educational needs of children in the top 1% to 2% of intellectual ability, was distributed. The major result found was that for many of the comparisons, the levels of attainment of the control group and the low IQ subgroup, relative to their measured ability, were greater than those recorded for the gifted groups. The questionnaires completed for the sample students showed greater variations in levels of attainment and in width of interests for the gifted as compared with the control group. The teachers originally nominated 15% of the gifted sample as controls and classified only 27% as having an attainment level of 1 year or more above the class average. The majority view of 80% of the separate group of Head Teachers was that gifted children had special needs which could be catered for in primary schools. Teacher and parent nomination produced a biased sample of gifted children, which might be avoided by a random selection and group test screening of all students. (Author/SBH)

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GIFTED CHILDREN

Their relative levels of scholastic achievement and interests: Teachers' views on their educational needs

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GIFTED CHILDREN: Their Relative Levels of Scholastic Achievement and Interests; Teachers' Views on Their Educational Needs

by FRIEDA PAINTER

ABSTRACT

The study compares the attainments and other characteristics of 73 Gifted and 64 Average-Bright Control primary schoolchildren, selected on the basis of a Stanford-Binet Intelligence Scale score of 140 and over, and 130 and under; also of two Sub-Groups obtaining I.Q. 160 and over, and 120 and under. Questionnaires were designed for and completed by the sample pupils, their parents and teachers in respect of physical, educational and social development, and home interests. A fourth questionnaire, requesting the views of 149 Head Teachers of primary schools on the educational needs of children in the top 1% - 2% of intellectual ability, was distributed with the assistance of the Chief Education Officer in a separate geographical area.

The methodology used in the study is described. The major result found is that for many of the comparisons made the levels of attainment of the Control Group and the Low I.Q. Sub-Group, relative to their measured ability, are higher than those recorded for the Gifted Groups. The questionnaires completed for the sample pupils show greater variations in levels of attainment and in width of interests for the Gifted as compared with the Control Group. The teachers originally nominated 15% of the Gifted sample as Controls and classified only 27% as having an attainment level one year or more above the class average. The majority view of 80% of the separate group of Head Teachers circulated was that gifted children had special needs which could be catered for in primary schools.

cont'd....

Teacher and parent nomination has produced a biased sample of gifted children as in other studies. This might be avoided by a random selection of schools and group test screening of all pupils. No attainment tests have been found specifically for testing the achievement levels of children of I.Q. 140 and over. In seeking the views of Head Teachers bias was avoided as all schools were circulated in the area concerned.

October 1975.

REPORT FOR THE SOCIAL SCIENCE RESEARCH COUNCIL

GIFTED CHILDREN:

THEIR RELATIVE LEVELS OF SCHOLASTIC ACHIEVEMENT AND INTERESTS; TEACHERS' VIEWS ON THEIR EDUCATIONAL NEEDS

C H A P T E R 1

INTRODUCTION

The paucity of information on the situation of intellectually 'gifted' children, through the absence of any comprehensive British study as regards their distribution in primary schools and their academic and social needs, has resulted in a lack of discussion based on research findings and consequently little illumination both to assist the practising teacher and the Local Education Authorities regarding the educational requirements of this category of children. An empirical need was seen for the collection of data relating to 'gifted' children during the course of work in a voluntary capacity for the National Association for Gifted Children in Britain from the period of its foundation in 1967. Educational research, at any time, is fraught with problems of definition and measurement but when dealing with the highly intelligent the unknown delineations are even greater. Accordingly, since the difficulties involved in studying 'gifted' children are so considerable, the only contribution this modest project can make is to high-light some aspects of children in the top one to two per cent of the intelligence continuum in their school environment. The work was undertaken in spite of the problems involved because it was felt to be of importance. Great talents, in whatever field, may reach

fruition to the real benefit of their holders and of the community, may lie fallow, or may, if distorted, become a danger to their possessors and to society.

The present project is intended only as a pilot study in a field of great importance, breadth, complexity and difficulty. Its aim is to give some form to the actual problems of research at the higher end of the intelligence continuum by studying a group of highly intellectual pupils in comparison with a second group of average-bright children. It is believed, too, that it will assist in showing some of the possibilities of carrying out future work with 'gifted' children and indicate within this field possible areas of study which might reward investigation.

Talents vary in type and since the amount possessed by individuals differs there is no clear-cut line of demarcation between talented children and others - yet if two individuals are compared, the one well-endowed with a particular ability and the second person possessing such attribute only to a limited extent, the difference between them is revealed. The selected feature to be studied here will be that of high intellectual ability since, without denying the importance of the contributions made by other gifts, it is believed that those children capable of depth and quality in thought have an important role to play in our complex technological period.

For the purpose of this study, the term 'gifted' will be applied to those children able to score an intelligence quotient of 141 or more on the Terman-Merrill (1960) Revision of the Stanford-Binet Intelligence Scale. It has been decided not to adopt the wider view of talents which is embraced in recent works in the United States (Torrance, 1971; French, 1964) and in this country (Ogilvie, 1973; Hitchfield, 1973)

for two reasons. Firstly, the field of study had to be limited and secondly, tests in creativity and abilities such as in the arts, music, sport or social skills are less well-developed in a standardised form or do not exist. Even where appropriate instruments have been developed their statistical reliability and validity is more open to question at the extreme upper end of the distribution of ability than at the more intermediate levels. Tests have been selected for use here on the basis that they are at least well-established and well-recognised so they are likely to be more acceptable as instruments for the purpose of obtaining approximate mental measurements for pupils of superior intelligence.

Recent Literature: British work includes that undertaken by Bridges (1969) who refers to low parental expectations of 'gifted' children leading to poor habits of work. He has found that they might set themselves a 'stint' sufficient to satisfy the adult world but which allowed them to 'coast' without making any great effort. He considered that under-achievement was present when a bright child had powers much in excess of those he was called upon to use in school. Ogilvie (1973) studied the attitudes of teachers and reports that a section of them believed a proportion of 'gifted' children passed through school unrecognised, that some anti-intellectualism was present in schools and that low expectations were probably a powerful brake on the rate at which the children progressed. The latter conclusion appears to be supported by Tempest's experiment with fifteen pupils with a mean I.Q. 130 (WISC) (1971, 1974) who showed the levels of attainment which might be reached by highly-intellectual children and provided for the production of work cards for use by teachers. Mitchfield (1973) in her study of 'gifted' children, drawn from the 1958 Cohort of 17,000 births, shows under-achievement by 11.4% of those with I.Q's. 130 and over (WISC).

From the extensive literature on 'gifted' children in the United States the work of Terman (1925-59), Pegnato & Birch (1959), and Barbe (1964), is particularly relevant to the present study. Terman calculated that the typical gifted child was accelerated in school by 14% of his age as compared with unselected children but that he was 48% of his age above the norm in intelligence. Taking the 34%, the difference between these two values, he commented that from one point of view it might be said that "the gifted child is under-promoted to the extent of 34% or approximately one-third of his age". He recognised that there were other considerations to be taken into account but continued, "as far as mere ability to accomplish, it will be shown that some two-thirds of the under-promotion found with this group is unjustified". Finding that the gifted group scored more highly on General Knowledge than other school subjects, Terman surmises that this is "probably due to the fact that the child's stock of information is more dependent upon intellectual initiative and less upon formal school instruction". Terman's research shows that the teachers under-estimated the children's levels of achievement. Subsequent follow-ups showed that the intellectual superiority of the children had been maintained, the majority remaining close to the 99th percentile of the generality in mental ability. This was found to be true of those who did not go beyond High School as well as for those who were candidates for advanced degrees. The report continues, "the data indicate not only do the mentally superior hold their own, but they actually increase in intellectual capacity".

Pegnato and Birch shed light on the comparative reliability of methods of identification of gifted children. They found that teachers'

judgments identified only 45% whereas the use of a group intelligence test with a cut-off point of I.Q. 115 discovered 92% of the total pupils identified by the use of a set of seven different methods.

The research project undertaken by Barbe has points of similarity to the present study both in its design and its findings, although it does not specifically investigate the children's standards of attainment relative to their measured potential and it refers to the American scene. The study compared 65 paired children in two groups, one composed of highly-gifted and the other of moderately-gifted children in respect of 1) the presence and extent of educational differences; 2) their personal characteristics and adjustments; 3) their family background.

CHAPTER 2

I AIMS OF THE PRESENT STUDY

The aims of this study have been limited by the small resources available as well as by the imperfect nature of the tests. The purpose of this project has been to:-

1) identify a group of 25 gifted infants and 25 gifted juniors in primary schools and for them to be paired by control children of average ability.
2) compare standards of scholastic attainment by the two groups relative to their measured ability.
3) obtain and compare data relating to the physical characteristics, social relationships, interests and background of the two groups in order to give a generalised picture of features of the two groups, primarily in the school setting.
4) ask the opinions of the head teachers of all the primary schools in a selected Local Education Authority area as regards the existence of gifted children in their schools and whether or not they consider them to have special needs.

II METHODOLOGY

The methodology used in the project has involved the following:-

1) The discovery of the sample of 'gifted' children and the selection of the corresponding pairing controls, and obtaining permission for their participation in the study.
2) The selection of appropriate tests for:-
   (a) assessment of the intellectual potential of the sample pupils,

(b) obtaining a measure of their scholastic attainments,

(c) a group intelligence test for screening for intellectual potential.

3) Examination of each child with an individual intelligence test and the use and scoring of group attainment tests in Reading, English and Mathematics. Relative values were calculated from the scores obtained for the purpose of making a comparison of the measures recorded of the relative abilities and attainments of the two groups of children.

4) The design of three questionnaires for completion by the sample children themselves, their parents and teachers as regards selected features relating to the pupils, their scholastic environment and their preferred activities in school and at home; the collection of the completed forms and their examination for patterns in the replies and noteworthy differences and similarities in the answers given for the two groups, whether between the responses of the children themselves, their parents or their teachers.

5) The design of a questionnaire addressed to primary school head teachers of one Local Education Authority area regarding the gifted children in their schools - a random 10% of the forms to be completed during the course of a personal interview with the Head Teacher and the investigator, the remaining 90% being sent by post. The subsequent examination of the replies received from the Head Teacher to discern to what extent they believed gifted children were present in their schools and the measures they considered appropriate to meet their educational needs.

An assessment of the children's intellectual potential was made on the Stanford-Binet Intelligence Scale by one of three independent psychologists. A measure of the pupils' levels of scholastic attainment was obtained by the use of the N.F.E.R. tests in Reading, English and Mathematics, and also by teachers' ratings of the relative levels of the sample children's classwork by comparison with the average standards of attainment of the main body of pupils in the same school classes.

III THE SAMPLE

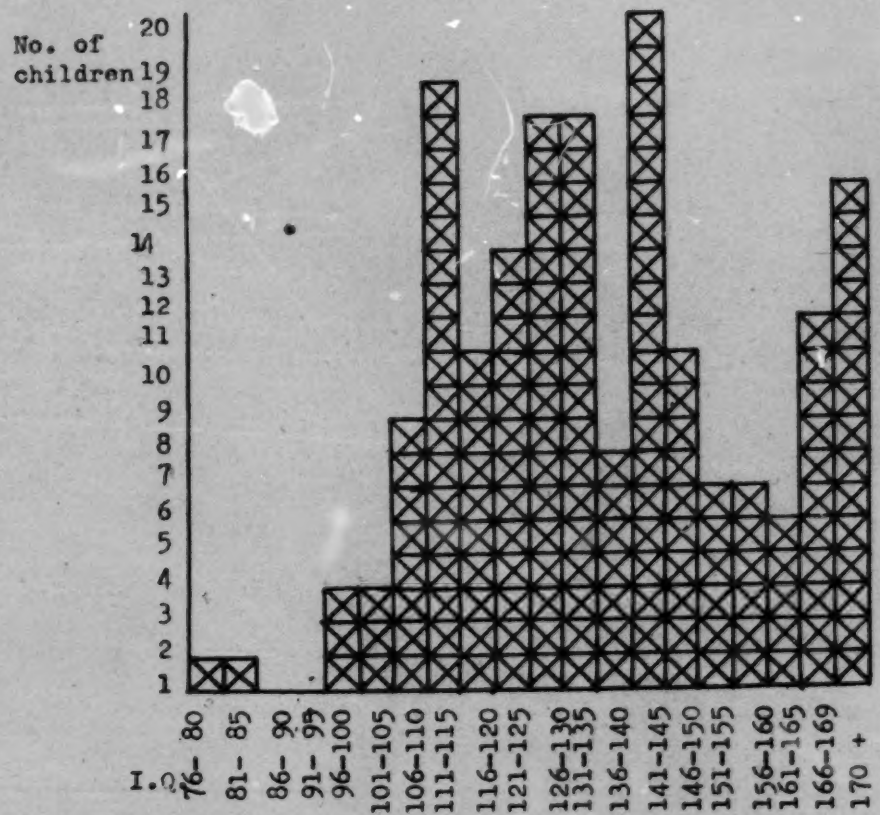
For the purposes of this study 174 children, 116 boys and 58 girls, were tested, or a pre-existing test score was obtained for them, on the Terman-Merrill Intelligence Scale (1960) Revision. The procedure adopted was to obtain the nomination of a gifted child and then to seek a pairing control pupil in the same school class. Figure 2/1 gives the distribution of I.Q's obtained.

The Gifted Group: 97 children were nominated as probably having an I.Q. of 140 or over, of whom 61 have been included in the present sample. At the time of their inclusion the pupils were aged from 5 yrs. 7m. to 11 yrs. 8m. and the group consisted of 32 infants and 41 juniors. The children were not selected from a particular year-group because of the expected scarcity of children in the top 2% of intellectual ability and the consequential increase in the number of schools it would have been necessary to visit to discover the requisite number of pupils.

The children initially included in the sample were those of members of the National Association for Gifted Children and agreement for a child's participation was sought and obtained from the child's parents

FIGURE 2/1

DISTRIBUTION OF TOTAL OF 174 INTELLIGENCE QUOTIENTS OBTAINED ON STANFORD-BINET SCALE



and subsequently from the school. Some parents were reluctant to give permission for the school to be contacted lest by taking the initiative in allowing their off-spring to be included among a sample of gifted children resentment was caused at the school, which in turn, might be reflected in the teacher's treatment of their child. Reassurance was given to them on this issue and although it became apparent that in a minority of cases a state of tension did exist between the parents and the school, in no case was consent with-held. The parents were asked

to complete a questionnaire addressed to themselves and were assured that all the completed questionnaires would be treated in strict confidence and that no information they gave would be passed to the school; nor would any comments made by the school be conveyed in the reverse direction. A guarantee was given that strict anonymity would be observed concerning all those who participated in the study. The children's attendance during the discussions was avoided as it was considered to be undesirable.

TABLE 2/1 SOURCES OF NOMINATIONS OF GIFTED CHILDREN

Nomination by:-	SAMPLE		TOTAL
	Included	Not Included	
Parents	13	8	21
Teachers	37	16	53
Psychologists	10	-	10
Misc.	1	-	1
TOTAL	61	24	85

Several Child Guidance Clinics and individual psychologists were asked to nominate gifted children, and as a result ten children were included in the sample after the parents had agreed and had given permission for the relevant intelligence test scores to be made available for this purpose. Table 2/1 shows the nominating agents of the 85 candidate gifted children.

As the Stanford-Binet Intelligence quotients were of fundamental importance for this project and would involve scores over two standard

deviations from the mean, it was decided this testing should be undertaken independently. For over half the gifted and over three-quarters of the Control children the examination was conducted by Mr. M.Argent, from the Department of Psychology at Imperial College, the remainder of the sample being tested by two other experienced psychologists. With isolated exceptions the testing was conducted in the children's schools and in most cases the pairs consisting of one gifted and one control child were examined by the same psychologist.

FIGURE 2/2 85 CHILDREN NOMINATED AS GIFTED
DISTRIBUTION OF I.Qs. (Stanford-Binet)

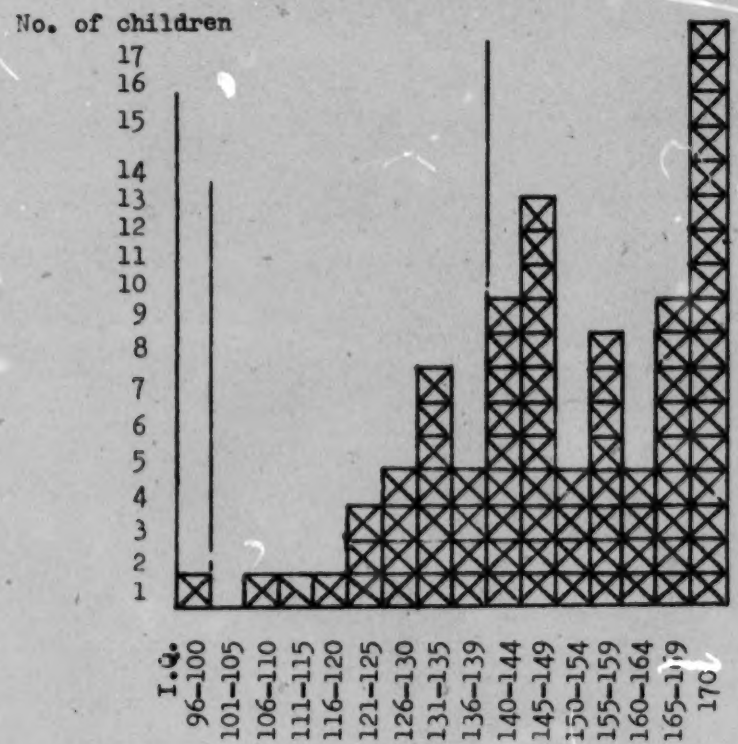
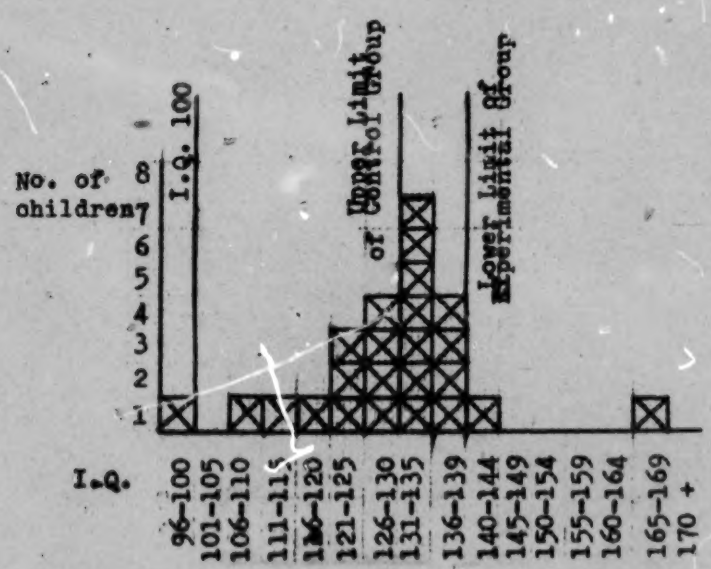


Figure 2/2 shows the distribution of the I.Qs. obtained for the 85 candidate gifted children: 22 pupils were omitted as they failed to

reach the 140 cut-off point, three gaining an I.Q. of between 110-119 and one an I.Q. of 100. Two children with I.Qs. of 140 and 165 were excluded as their schools were unwilling to co-operate and this precluded the selection of a suitable control child to make the pair. The distribution of these 24 children is shown in Figure 2/3.

FIGURE 2/3 DISTRIBUTION OF I.Qs. of 24 CANDIDATES GIFTED CHILDREN EXCLUDED FROM SAMPLE



The Schools: A description of the project and a request for their co-operation was made to the Head Teachers of the schools named by the parents during a personal visit by the investigator. Most of the Heads enquired why their school had been selected for inclusion in the study and were interested to know that a candidate gifted pupil attended for whom the parents had already given permission for participation in the

project. The request made to the school was for the Teachers' Questionnaire to be completed for the child concerned, it being made clear that no information from the form would be conveyed to the parents, and similarly, that comments on the Parents' Questionnaire would not be passed to the school. The great majority of the Heads were quite willing to co-operate in this way. Nothing further was asked from the first few schools approached and the interview terminated with an expression of appreciation for the school's co-operation. During the discussion, almost without exception the Heads expressed interest in the study, a number of them remarking that investigation was needed into the progress of the brighter children.

As the research proceeded, it was necessary to ask the schools for more extensive co-operation as follows:-

1) To select a pairing control child of average ability who matched the gifted pupil for:-
   (i) Sex,
   (ii) Same school class teacher and/or teaching unit,
   (iii) Similar social status of parents,
   (iv) Comparable economic background,
   (v) Chronological age.
2) To obtain the control child's parents' permission for their off-spring's participation in the study.
3) To despatch the relevant questionnaire to the parent with an envelope addressed to the author for the form's return. This procedure enabled the completed questionnaire to be received without its contents being communicated to the school and relieved the author of direct contact with those parents involved through the school.

4) To allow the psychologist to test the children concerned at school.

5) To permit the researcher to give the children the appropriate NFER attainment tests.

Fifteen of the nineteen schools approached via the parents of presumed gifted children agreed to this procedure, both the Head Teachers and their staffs being most co-operative. In six cases the Heads expressed surprise at the names of the candidate gifted pupils and in seven schools one or more additional children were nominated, the candidature of whom was accepted without hesitation.

A standard letter was sent to all the parents whose children were to be invited to participate in the project, no indication being given that the study was concerned specifically with gifted children so that it was unnecessary to say whether a pupil was to be included as one of the gifted or pairing children. Similarly, no distinction was made between the two groups of children during the testing.

Ten schools were contacted as a result of an initial introduction from a teacher and the procedure was similar to that already outlined. Of these, two were infant schools suggested by the Heads of the Junior Schools with which they were associated; two other Junior Schools into which pupils had passed from the feeder infant school before testing had been completed; one was contacted through a lecturer in higher education and one - sited in the Midlands - was introduced through the good offices of a primary school head in that area.

The Local Child Guidance Clinic was the channel through which the link was established for four schools and a fifth, in Wales, was involved through the good auspices of a psychologist. This latter school, and

the one in the Midlands, were the only ones in which the work was not carried out personally by the researcher. Three schools were named by a local branch of the National Association for Gifted Children and three were already known to the investigator.

Altogether 40 primary schools were contacted of which 33 co-operated fully; in addition three secondary schools as sample children passed into them before completing all the tests and worked these during the first weeks of the Autumn term.

Seven primary schools visited, situated in six different Local Authority areas, declined to participate. In two of these, where a gifted pupil was already known, the Heads agreed to co-operate but permission for them to do so was withheld by their Local Education Office. Elsewhere, a Head Teacher agreed to participate providing all the pupils were involved in any one school class but would not agree to the selection of two or four children according to the specified requirements of this research. Since the resources available were not sufficient to fulfil this condition, the school's offer had regrettably to be declined. In a further school the Head agreed to complete the Teachers' Questionnaire but was not willing to select a pairing pupil. The parents of this child were among those early involved and the Terman-Merrill test had already been given at home before the school was contacted; the pupil was not included in the sample as there was no pairing child. A similar situation arose in another area with a further pupil. Here the Head expressed strong opposition to the whole concept of the research study; it was the only school where such a view was stated among the total of 43 approached.

The Head Teachers of two of the participating schools changed while the field-work was in progress. In one the new Head expressed willingness

to continue with the project and like his predecessor rendered all possible help. In the second, the new Head Teacher refused even to grant the researcher an interview although work with children in the school was in progress and information regarding it had been passed on by the previous Head. In this case arrangements were made for the children to work the remaining attainment tests in the home of one of the participants.

The above procedures resulted in 61 gifted children being included in the sample.

The Control Group: The thirty-three participating schools nominated 98 control children between them, the form of whose involvement is shown in Table 2/2. The distribution of the I.Qs. gained by the 89 children who were tested (nine omitted, see Table 2/2), is given in Figure 2/4.

FIGURE 2/4 DISTRIBUTION OF I.Qs. OF 89 CONTROL CHILDREN NOMINATED AS OF AVERAGE ABILITY

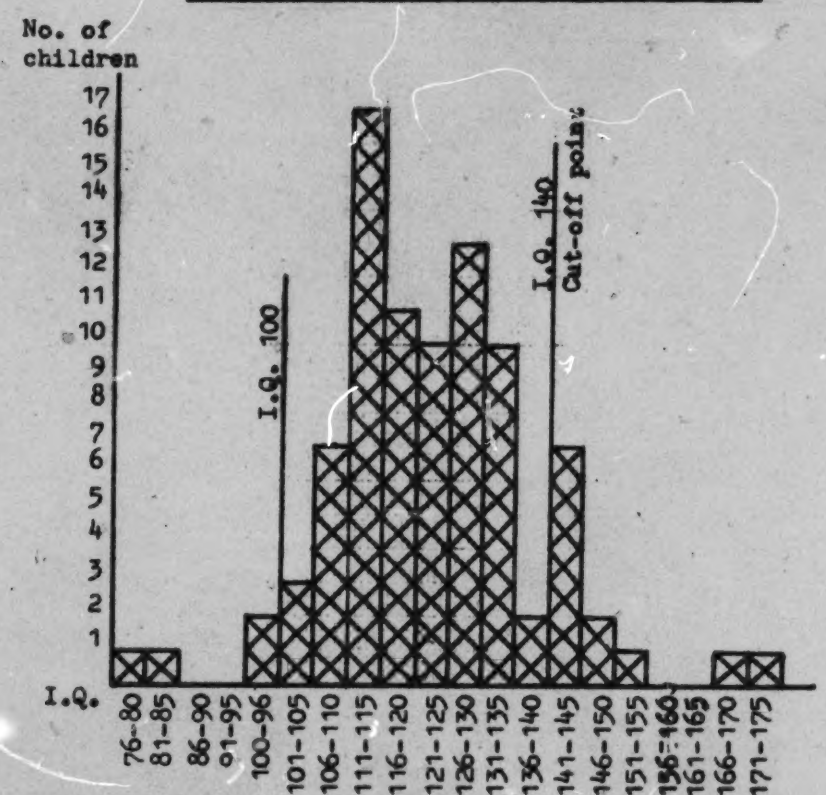
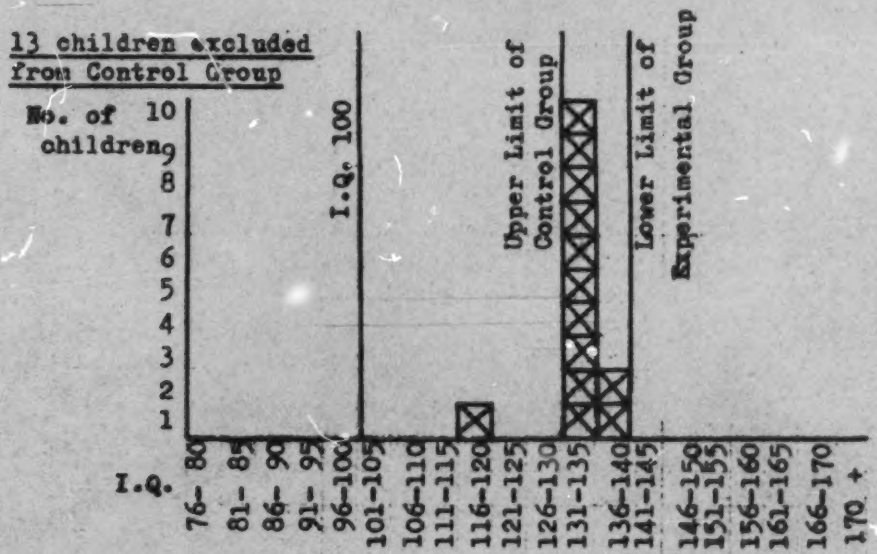


FIGURE 2/5 13 NOMINEES EXCLUDED FROM CONTROL GROUP



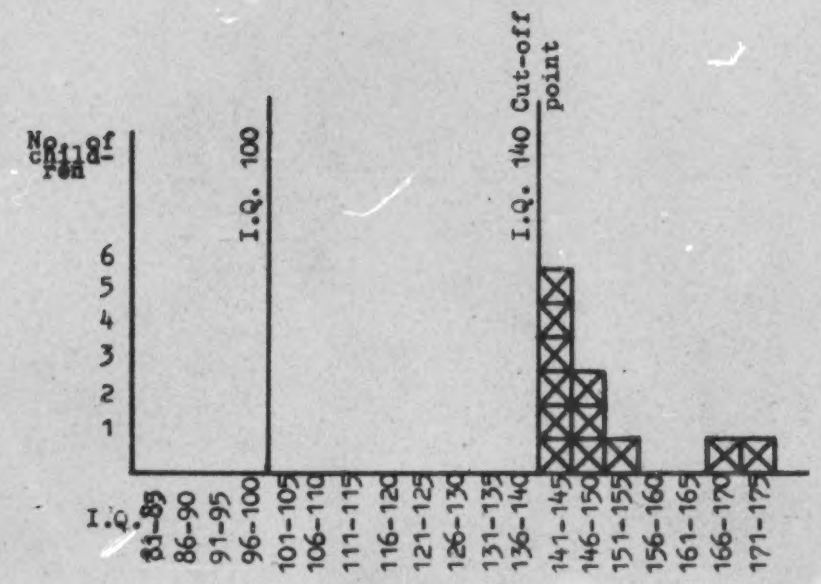
The high I.Q. values scored by a large proportion of the pupils selected by their teachers as of average ability was unexpected. Thirteen children shown in Figure 2/5 gaining I.Qs. from 131-139 inclusively were excluded from the sample so as to increase the contrast between the two groups. Twelve Ex-Control children obtained an I.Q. of over 140 and accordingly have been included in the gifted sample; the distribution of their I.Qs. is shown separately in Figure 2/6.

TABLE 2/2 COMPOSITION OF GROUP OF 98 NOMINATED CONTROL CHILDREN

	No.
Nominated Controls in sample	55
Nominated Controls scoring I.Q. 130-139 (inclusive) Not included in sample	13
Replacement Controls in sample	9
Controls not tested as candidate gifted partner below I.Q. 140 cut-off point	9
Ex-Controls included in gifted sample	12
*Control excluded as pairing candidate gifted I.Q. Score below 140	1
TOTAL	99

* Not tested

FIGURE 2/6 I.Q. DISTRIBUTION OF 12 EX-CONTROL GIFTED CHILDREN



Replacement Control pupils were sought, for the twenty-five excluded by further visits to the schools concerned. A pairing control child was not found for a number of the Ex-Control children but it was considered important to retain the latter as they had been discovered accidentally. Nor was a replacement partner found for several other gifted children already in the sample who were retained. As a result 73 gifted and 64 control children have been included in the study. The mean I.Q. for the control group is 116 and not 100 as intended.

The happenings in three schools are recounted as examples of those which led to this position.

The participation of two pairs of children in an infant school had been agreed but when the psychologist tested the proposed control pupils

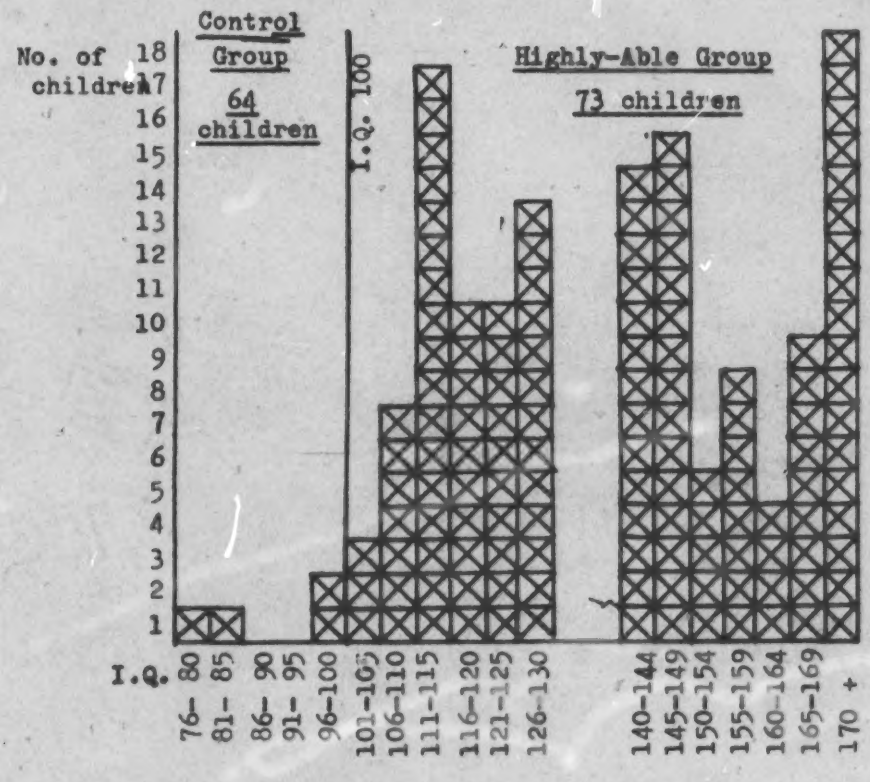
both obtained I.Qs. above the 140 cut-off point, one obtaining an I.Q. of 170+. Before further testing could be undertaken the children moved to the Junior School where the head was subsequently approached. Here, the request was only for four control children to be selected from the school classes into which the four gifted children had been placed. Upon testing, one of the four pupils so nominated scored above I.Q. 140 and was transferred to the gifted group. The head was then asked to provide two more control children. The final position was that five pairs of children have been included in the sample, drawn from two school classes. No attempt was made to find other gifted children in this school.

A similar situation arose where the testing was undertaken by a different psychologist in the second school. Four pairs of children were nominated but when the children were tested on the Stanford-Binet it was found that one of the gifted children obtained an I.Q. of only 128 while the pairing control child scored 143. Accordingly, the two children were changed round and added to the appropriate groups. In a second pair, the control child scored in the 130s. and a replacement pupil was requested. When this latter child was tested he obtained an I.Q. of 146 so that he too was added to the gifted group and the Head was asked for two more control children. There were no more children available in the school class who matched on all the pairing points so a child was included of a different sex. This was the only occasion when the sexes were mixed in the pairing arrangements.

In the third school there were two pairs of children, one of whom had already been shown to be gifted. When the psychologist tested the remaining three all obtained I.Qs. in the 130s. The school was asked

to find a replacement control child for the known gifted-pupil - this latter child obtained an I.Q. of 141 and became one of the Ex-Controls in the gifted group. It was not possible to obtain further replacement control partners as term had ended and the children from this class would be dispersed into various secondary schools the following term. The I.Q. distribution of the 137 children included finally in the sample is shown in Figure 2/7.

FIGURE 2/7 I.Q. DISTRIBUTION OF GIFTED AND CONTROL GROUPS



The complications that ensued as a result of participation in this study involved some of the schools in far more extensive and protracted arrangements than had originally been anticipated. The tremendous contribution that has been made to this work by the patience and unlimited help given by the schools is worthy of special note.

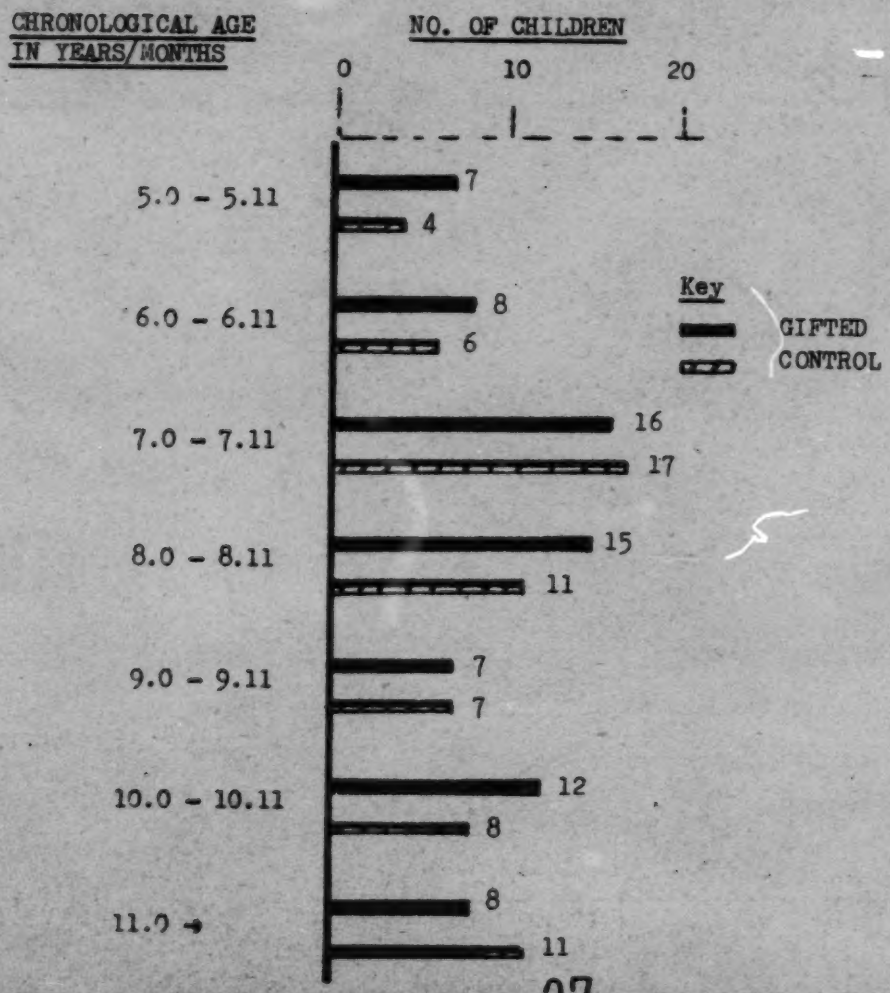
The final numbers for the sample are:-

Gifted Group:	Boys .....49 Girls 24	-- 73
Control Group:	Boys .....41 Girls 23	-- 64

The pupils were drawn from a total roll of approximately 8,500 but the search for gifted children was not exhaustive among this school population and it is to be expected that there were other gifted children among them who were not identified.

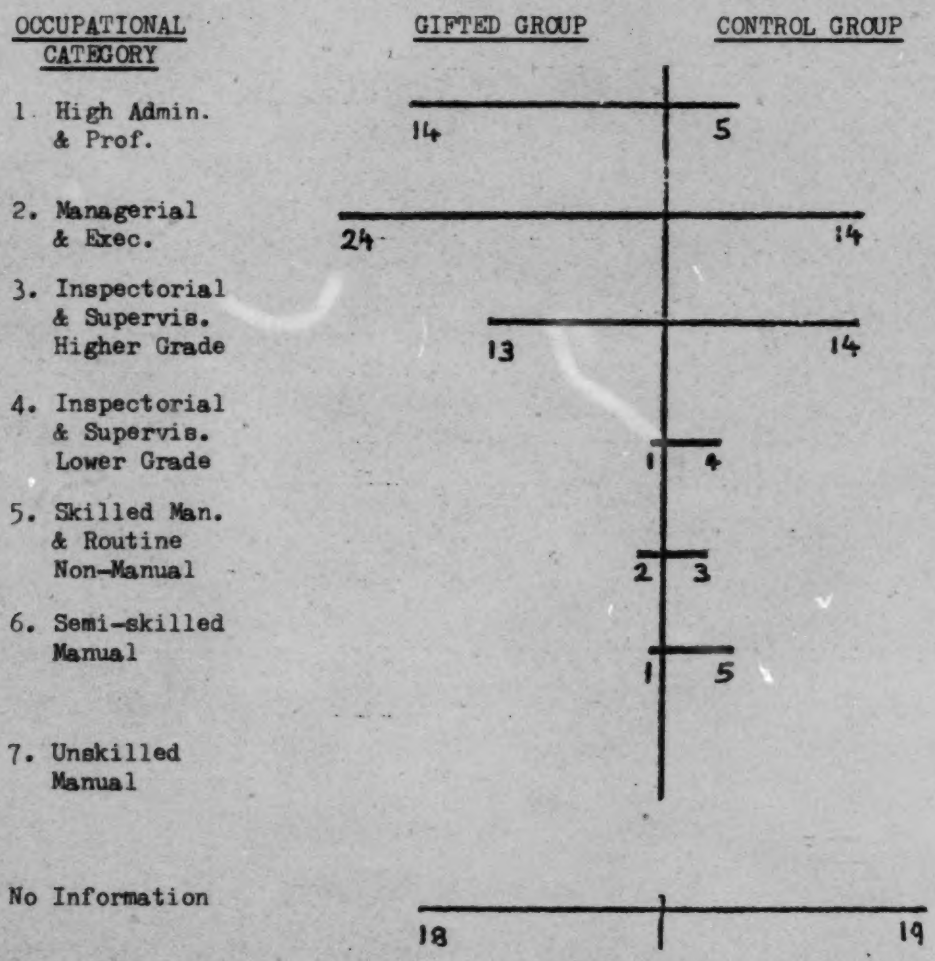
Chronological Age of Sample: The chronological ages of the sample children at the time of their inclusion are shown in Figure 2/8, the mean for the Gifted Group being 8 yrs. 6m. and for the Control Group 8 yrs. 8 m.

FIGURE 2/8 CHRONOLOGICAL AGE DISTRIBUTION OF 137 CHILDREN IN SAMPLE



Parental Occupations: Information regarding parental occupations was not found to be readily available from the schools as in some cases the Head Teachers were hesitant to supply it or the school record was often vague and gave no indication of the responsibility level involved while in one school details were said to be unknown as the school did not require the information. Where occupations were supplied the current blurring of social class distinctions and the emergence of new skills and areas of technical knowledge has made it difficult to categorise the positions held. Notwithstanding the foregoing an attempt has been made in Figure 2/9 to show the socio-economic background of the sample using the Standard Classification of occupations adopted by David Glass.

FIGURE 2/9 SOCIAL CATEGORIES OF SAMPLE PARENTAL OCCUPATIONS ON GLASS'S STANDARD CLASSIFICATION



An attempt was made to increase the number of working-class children in the sample by the inclusion of two schools catering mainly for such pupils. Four children were nominated gifted in one school, including a pupil who was a disciplinary problem (he participated with zeal in the research tests) but all scored I.Qs. of only between 125 and 129. An opportunity was taken to involve a school in an industrial area and arrangements were made with the Local Child Guidance Clinic to test one pair of children. The psychologist assessed the candidate gifted child as having an I.Q. of 100 and commented in his report:-

> "I am at a loss to discover why this child was thought to be of superior intellectual function, except perhaps that he is a conforming and rather polite boy in a school where such children are at a premium".

Sample Distribution in Schools: The sample was distributed among the participating schools as shown in Table 2/3 from which it can be seen that there is a large variation in the number of children contributed per school.

TABLE 2/3 SPREAD OF SAMPLE AMONG PARTICIPATING SCHOOLS

No. of Sample Children Contributed	No. of Schools Contributing
15 - 16	1
13 - 14	-
11 - 12	-
9 - 10	1
7 - 8	3
5 - 6	7
3 - 4	7
1 - 2	10
None	2
Total 137	Total 31

Note: No. of schools two less than 33 involved as pupils changed schools.

Table 2/4 shows the status of the participating schools' organisation. Both Protestant and Catholic Voluntary Aided and Voluntary Controlled Schools were included in the study.

TABLE 2/4 DISTRIBUTION OF PARTICIPATING SCHOOLS BY SCHOOL STATUS

School Status	No. of Schools	No. of Gifted Children	No. of Control Children	Approx. No. on Roll
County Pr.Sch.	27	60	51	6,770
Voluntary Aided or Controlled:				
(i) Protestant	4	8	8	790
(ii) Catholic	2	5	5	440
TOTAL	33	73	64	8,000 estimate

The urban or rural setting of the schools is shown in Table 2/5. About the same proportion of gifted children relative to the number of schools participating, were identified in the rural as in the urban areas.

TABLE 2/5 SETTING OF PARTICIPATING SCHOOLS

Setting:	No. of Schools	No. of Gifted in Sample	No. of Control Children
Urban or suburban	27	63	55
Semi-Rural	4	6	5
Rural	2	4	4
TOTAL	33	73	64

The sizes of the participating schools and the numbers of gifted children identified in them is shown in Table 2/6. No screening device was adopted aimed at identifying all the gifted children in a particular school, with one exception.

TABLE 2/6 SIZE OF PARTICIPATING SCHOOLS AND NUMBER OF GIFTED CHILDREN IDENTIFIED

No. of Schools	School Pupil Roll	Total Pupil Roll	No. in Sample Gifted	Control	No. of Gifted in Sample Teacher Nom.	Ratio: Nom. Gifted/Roll
2	0-100	152	4	4	2	1 : 76
6	101-200	1,051	8	8	7	1 : 150
16	201-300	4,179	47	43	23	1 : 181
5	301-400	1,820	6	5	1	1 : 1820
2	Over 400	806	8	4	5	1 : 161
31	TOTALS	8,008	73	64	38	
Note:	No. of schools two less than 33 involved as pupils changed schools.					

IV TEST PROCEDURES

Stanford-Binet Intelligence Test: The 1960 Terman-Merrill Revision of the Stanford-Binet Intelligence Scale has been adopted as the instrument for measuring the children's ability since it is well-recognised; it is a measure of general rather than specific performance and has been used for previous studies of gifted children.

Table 2/7 shows the conditions under which the intelligence values were obtained. 60 gifted and 64 control children were examined for general ability solely for the purposes of this study over a period of eighteen months. Fifty-five of the gifted sample and all 64 control children were tested in school. Five children were tested at home of whom two were among the early parent-nominees examined for giftedness before their schools were approached while for the other three it was

because of the school vacation. These five examinations were carried out by two of the psychologists involved in the main testing programme. Pre-existing test scores were obtained for thirteen of the gifted group, details are given in the 'note' to Table 2/7.

TABLE 2/7 MANNER IN WHICH STANFORD-BINET INTELLIGENCE SCORES OBTAINED

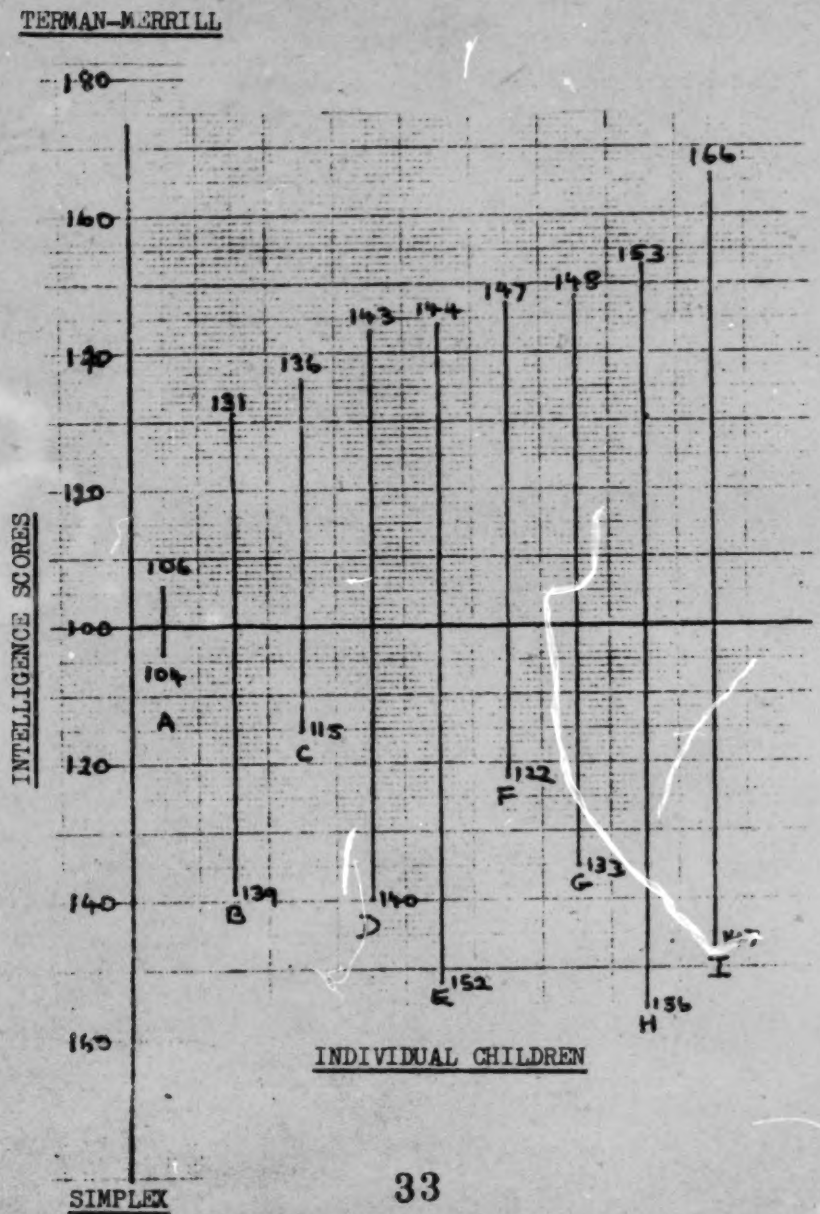
IQ Score Obtained:	Gifted Group	Control Group
At home	5	-
At school	55	64
Previous score utilised	13	-
TOTAL	73	64

Note: 13 test figures obtained as follows:-
6 from psychologists who performed main testing in this study.
4 from Educ. Psy. attached to four different Child Guidance Clinics.
3 from two consultant psychologists.

Simplex Group Intelligence Test Screening: Screening on the Simplex Test was carried out in one junior school. The head requested the class teachers to nominate candidates for inclusion in the gifted group and a pairing control child of average ability. Where there was doubt as to which pupil to select both children were included in the screening group which finally totalled 31, the pupils being drawn from most of the school's classes. The test was given to the selected children as a group, no distinction being made between them according to their candidature as gifted or control children.

The results of the Simplex screening in relation to the Stanford-Binet score are given in Figure 2/10 for the nine children tested on both instruments. The continuous spread of the IQ scores was unexpected as the pupils had been chosen as being of either superior or of average intelligence. The number of control children

FIGURE 2/10 COMPARISON OF I.Q. SCORES OF 9 CHILDREN ON TERMAN-MERRILL AND SIMPLEX INTELLIGENCE SCALES



classified by their class teachers as of average ability who scored IQs in the 120s and 130s was surprising. Although there were large discrepancies between the intelligence quotients from the Simplex and the subsequent Stanford-Binet examination, the group test aided the selection of children to be tested individually.

Attainment Tests: A series of National Foundation of Educational Research untimed English and Mathematics tests and a Reading test were used, all of which were given by the investigator with the exception of those to the two pairs of children in Wales and the Midlands. The booklets were worked under standard test conditions and were subsequently marked by the investigator. Table 2/8 shows the distribution of the completed tests. A greater number of scripts were worked by the gifted as compared with the control

TABLE 2/8 MARKED ATTAINMENT TESTS

Test Title	Number Worked by:- Gifted	Control	Unused Scripts No.	TOTAL
ENGLISH				
Reading Test 'A'	17	15	12	44
English A.2	32	34	10	76
" B.2	17	11	4	32
" C.2	13	8	13	34
" D.2	18	13	10	41
" E.2	5	1	2	8
" F.3	1	-	-	-
MATHEMATICS				
Basic Maths 'A' (oral)	32	30	14	76
" " 'B' "	12	10	-	22
" " 'C'	31	17	7	45
Maths 'DE'	25	14	11	50
" 'FG'	10	2	2	14
Secondary Maths	1	-	-	1
TOTAL	204	155	85	444

pupils since:-

(1) There were 73 gifted and only 64 control children.

(2) Where gifted children obtained a raw score three points or less than the maximum obtainable, they worked additional tests intended for older children.

The 73 unused scripts were those completed by pupils subsequently excluded from the sample for reasons previously mentioned (p.11 - p.18).

V QUESTIONNAIRES

The questionnaires were distributed in the participating schools; the parents' questionnaires for appropriate forwarding together with a stamped addressed envelope for the return of the completed form direct to the investigator, and the teachers' questionnaires for completion by either the head or class teacher, in respect of the sample pupils. The children's questionnaires were completed by the children while at school. The investigator supervised the junior pupils' completion of their forms and normally conducted individual structured interviews with the infants to obtain their answers - exceptionally and alternatively the teacher aided an infant. A digest of the views expressed in the questionnaires will be found in Chapter 4.

CHAPTER 3

RESULTS 1 - INTELLIGENCE AND ATTAINMENT TESTS

NULL HYPOTHESES

The Null Hypotheses tested were that, in respect of performances in Reading, English and Mathematics:-

> 'There is no significant difference between the mean values obtained for the relationships between the levels of ability and performance of the gifted group and those of the control group of children, according to the tests used'.

The fore-going hypotheses have been tested as:-

(a) a ratio between mental age and educational age - subsequently to be referred to as the "achievement ratio",

(b) a difference between mental age and educational age - subsequently to be referred to as the "index of achievement".

The sample groups tested were:-

(i) The entirety of those parts of the sample groups who worked each of the individual NFER tests (subsequently to be known as the 'Main Group') in Reading, English or Mathematics, taken separately.

(ii) As for (i) but in respect of two sub-groups of the samples only, consisting of those of the gifted group obtaining an I.Q. of 160 or over, and of the Control Group 120 or under - subsequently to be known as the 'High IQ Sub-Group' and the 'Low IQ Sub-Group'.

(iii) For the Main Groups for each of the combined English and Mathematics, the test series being taken as a unit.

(iv) As for (iii) but for the High and Low Sub-Groups only.

(v) Three sub-groups of the gifted group distinguished according to the manner of their nomination, separate consideration being given to the values obtained on each of the NFER tests used.

The data upon which the above have been tested were derived from the children's performances according to the Stanford-Binet Intelligence Test and calculations based upon the NFER Standardised tables. For

each of the groups mentioned and in respect of both methods of examination, the distribution of the achievement quotients and indices have been compared by obtaining 't' ratios. The calculations have been carried out by computer at Hatfield Polytechnic.

TEST RESULTS

Reading and English - Mental Age to Educational Age

The Reading test was given to the younger infants as some of the control children were unable to obtain a score on the English A.2 test. The published tables for Reading Ages had to be extrapolated as the tests were designed for 1st year juniors, resulting in an increase in the probable degree of statistical error. The values are given in Table B/1,[1*] from which it will be seen that there is no significant difference in the relative values obtained for Reading, whether the achievement quotients or indices are considered, and whether the Main Groups are compared or the High and Low IQ Groups. When the achievement quotients are calculated the gifted infants are shown to be relatively more advanced at Reading; when the index is calculated there is little difference between the values for the Main Groups but the gap between mental age and reading age is shown to be larger for the gifted children when the High IQ and Low IQ Sub-Groups are compared.

English educational ages have been obtained from the printed tables of NFER standardised scores, or in a minority of cases for both the gifted and control children, have been extrapolated from these. This has been necessary, a) for the younger infants as no NFER attainment tests are designed for the 5 yrs. - 7yrs. age group and it was deemed

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1* The suffix 'B' denotes an Appendix 'B' table.

preferable to the alternative of introducing other tests from a different source and b) as some gifted children obtained a raw score at, or within three points of, the ceiling of the test designed for their own group and consequently were given the next more advanced test in the series. The latter procedure, together with the larger size of the gifted group, accounts for the greater number of worked tests by this group as compared with the control children. The extrapolations undertaken have increased the statistical error in the values obtained but the alternative would have meant the scores of some gifted children being artificially held down on account of the limited age span of the individual tests, and consequently an underestimation of their possible attainment level.

Tables B/1, B/2, B/4 and B/5 show, for comparisons firstly between the Main Groups and secondly the High and Low I.Q. Sub-Groups, the quotients and indices for the relative levels of achievement obtained on English A.2, B.2, C.2 and D.2. As may be seen there are no significant differences between the means of the distributions of the achievement quotients for the Main Groups, although the values are lower for the gifted group in each of the four English tests. When the data for the High and Low I.Q. Sub-Groups only are viewed, the performances of the gifted group relative to their ability are significantly lower than in the case of the control group, ($p. < .1$, $.01$, $.01$ and $.05$). The latter outcome is found also when the means of the achievement indices are considered where the differences for these comparisons are for the Main Groups $p. < .05$, $.02$, $.01$ and $.10$ levels respectively, while for the High and Low I.Q. Sub-Groups they are at the $p. < .01$, $.001$, $.001$ and $.01$ level.

Taking the English tests individually has resulted in double-counting since some gifted children worked more than one test, (see

p.31). Accordingly, in Table B/3 the values are derived from only one test score per child, that for the highest level test which the individual pupil performed and the mean quotients have been calculated from the combined scores obtained in the English test series. As may be seen, the differences between the mean achievement quotients for the Main Groups and for the High and Low I.Q. Sub-Groups are significant at the $p < .05$ and .001 levels. Table B/6 shows differences between the indices derived from similarly combined English test scores to be significant at the $p < .001$ level for both the Main and High and Low Sub-Groups.

Mathematics - Mental Age to Educational Age

The achievement quotients and indices of the levels of attainment relative to ability calculated from the scores obtained are shown in Tables B/7 and B/8. In the case of Basic Maths 'A' there are significant differences at the .001 level between the values obtained for the two Main Groups and for the High and Low I.Q. Sub-Groups whether the achievement quotients or indices are compared. For Basic Maths 'B' and Maths 'DE', the differences are not significant either for the Main Groups or for the Sub-Groups by either method of calculation. However, for Basic Maths 'B', in all four instances the values show the gap between mental age and mathematical educational age to be greater for the gifted Main and Sub-Group as compared with the corresponding control groups. For Maths 'DE' the results differ according to the method of calculation. When the mean achievement quotients are compared for the Main Groups, that for the Gifted Group is higher than for the Control Group and the excess increases further when the High I.Q. and Low I.Q. Sub-Groups are compared. However, the reverse is found for the mean

achievement indices the gaps between these being three months less for both the Control Main Group and Low I.Q. Sub-Group than is the case with the corresponding gifted groups.

The values for the achievement quotients for Basic Maths 'C' again indicate that the Main Gifted Group have attained at a level relative to their ability above that reached by the Main Control Group and for this instance the difference is significant at the $p<.05$ level; the same result is found when the High and Low I.Q. Sub-Groups are compared but the excess value of the gifted Sub-Group has been reduced so that it is nearer to that obtained by the Low I.Q. Sub-Group and it is not significant. The outcome is similar for the achievement indices when Mathematical Educational Age is subtracted from Mental Age, the gap between the two measurements being smaller for the Gifted Main Group than for the Control Main Group; when the High and Low I.Q. Sub-Groups are compared the gap between mental age and mathematical age is reduced to the extent that the values for the two Sub-Groups here equate.

In Table B/6 the mean achievement quotients have been calculated from the combined scores, only one value per child being included (that for the most advanced test) for the Mathematics Test series. A comparison of the differences betweeen the mean achievement quotients for the Main Groups and for the High and Low I.Q. Sub-Groups shows that by this method of calculation there is no significant difference between them, although the achievement quotient value is lower for the Main Gifted Group and falls further for the High I.Q. Sub-Group while remaining the same for the Low I.Q. Sub-Group.

The results obtained by the second method of calculation are shown in Table B/12. When Mathematical Educational Age is subtracted from Mental Age the differences between the two pairs of achievement indices

are significantly larger for the Gifted Main and High I.Q. Sub-Groups as compared with those in the cases of the Control Main and Low I.Q. Sub-Group at the $p \leq .005$ and $p < .001$ levels respectively.

Comparison of the Relative Levels of Performance of Three Gifted Sub-Groups formed According to the Nominating Agents.

The gifted sample of 73 pupils has been formed into three sub-groups according to whether the child's nomination for inclusion was by:-

(a) his/her teacher - 37 pupils,

(b) " " parents, Child Guidance Clinics, etc. - 24 pupils,

or

(c) accident - these nominated by their teachers as of average ability to be Controls but who subsequently obtained an I.Q. of 141 or over and are now referred to as 'Ex-Controls' - 12 pupils.

The performances of the three sub-groups in Reading, English and Mathematics have been compared in respect of the achievement quotients and indices obtained. The results show that there is no significant difference between the three sub-groups, nor is there any obviously discernible pattern even in the direction of such differences as are found, but the answers obtained are unreliable as the numbers involved were small.

REJECTION AND RETENTION OF NULL HYPOTHESES

Reading and English

No differences between the achievement quotients and indices of the gifted and control children were found for Reading for either the comparisons between the Main Groups or the Sub-Groups.

In respect of the English tests, the results are as shown in Table B/3. Table B/6 gives the corresponding results for the second method of calculation using the same data, that is for the achievement

indices obtained by subtracting English educational age from mental age. The Null Hypothesis is rejected in all four cases when the scores for the English test series are combined, there being a significant difference between the achievement quotients at the .05 and .001 levels for the Main Groups and the High and Low Sub-Groups respectively, and for both cases at the $p < .001$ level for the achievement indices.

Mathematics

The results show no significant difference between the achievement quotients and indices of the gifted and control children for Basic Maths 'B' or Maths 'DE' for either the comparisons between the Main Groups or the Sub-Groups, but in the case of Basic Maths 'A' in all four instances since the achievement quotients and indices differ significantly at the $p < .001$ level.

The reverse position is found with regard to the achievement quotients of the Main Groups for Basic Maths 'C' where the Control Group has been found to perform relative to their ability at a significantly lower level ($p < .05$) than the Gifted Group. The Null Hypothesis is rejected here for the opposite reason to that found with Basic Maths 'A'. In the remaining three cases for Test 'C', limited differences were found between the achievement quotients for the High and Low Sub-Groups and the two comparisons in the case of the achievement indices.

When the comparisons are made for the combined Mathematics scores the Null Hypotheses must be retained with respect to differences between the achievement quotients of both the Main and Sub-Groups. However, when the calculation is made between the achievement indices for both the comparisons between the Main Groups and the High and Low Sub-Groups there are significant differences in these values at the $p \leq .005$ and .001 levels respectively.

Three Gifted Sub-Groups According to Mode of Child's Nomination

The Null Hypotheses cannot be rejected for any of the comparisons made here, the difference between the achievement quotients and indices obtained by the separate sub-groups being insignificant.

CHAPTER 4

RESULTS II - THE QUESTIONNAIRES

(1) Children's Questionnaires

Of the sample children, 69 gifted (93.5%) and 63 control pupils (98.4%) completed a questionnaire. The responses have been analysed under four headings:-

(1) Attitude to school and the school-day,

(2) Preferred curriculum areas,

(3) Relationships with the peer group,

(4) Choice of home occupations.

Tables C/1 - C/6 relating to the children's replies may be found in Appendix C.[1*]

1) Attitude to School and the School-day

55% each of the Gifted and Control Groups indicated that they liked school 'Very Much', while a quarter of the former Group and over one-third of the latter chose the option 'Quite a Lot'. The reliability of the foregoing was checked by a later respon[illegible] of the junior pupils as to whether in term-time they preferred to be 'At Home', 'At School' or 'Somewhere Else'. The Gifted Group's answers were in close agreement with their previous responses, 56% (as against 55%) chose school while 49% (as against 55%) of the control pupils made the same choice. 9.5% of the gifted and 29% of the control children chose home as their first option.

Question 2 asked the children which part of the school-day they preferred most, to which the highest proportion of both Groups, 38% of the gifted and 45% of the control pupils replied 'Play-time'. However,

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1* Tables with the suffix 'C' relate to Appendix C.

it is perhaps surprising to find that a quarter of the Gifted and almost a fifth of the Control Group answered 'Being in the Classroom'.

In reply to the third question, over 40% of the Gifted and a third of the Control pupils chose working on their own in the classroom as their preferred manner of learning. That such large proportions of both Groups of children elected this option, placed fourth in the list of alternatives, may be considered surprising. Twenty-four of the sample gave their reasons for this choice and these are quoted in full in Appendix 'C', Section 2. A supplementary question was addressed to the juniors as to whether they preferred working singly for part or most of the time and here the great majority (Gifted 74%, Controls 66%) selected the alternative 'Some of the Time' which suggests the children understood the implications of the question on their preferred manner of working. Only a quarter of the Gifted and 37% of the Control pupils chose learning at a table with one or more other children, while 16% of the former and a quarter of the latter preferred the class to be taught as a unit.

2) Preferred Curriculum Areas

In order that their responses should not be inhibited, the children were not restricted on the questionnaire as to the number of preferred curriculum areas they might name but this has led to considerable variation from child to child in the quantity of choices made. So that the likings of a few should not be disproportionately reflected in the nominal values the choices included from each questionnaire have been limited to three. The infants were asked to rank their first three choices during the structured interview where their selection exceeded this amount; where juniors have selected more than three options those

for Reading, Creative Writing and Mathematics have been included in the nominal values rather than any other additional choices they made. This procedure has resulted in some under-representation of the children's liking, particularly in the case of the Control Group, for the craft subjects. Table C/4 sets out values for the children's three preferred curriculum areas and Table C/3 the values for their first choices where these have been indicated.

Approximately 80% of the three choices allowed were utilised by both Groups of children. Reading and Pottery & Craft were the two subject areas the relative popularity of which varied the most between the two Groups, Reading being selected significantly more frequently by the Gifted children ($p < .01$). Pottery & Craft received few choices from either Group but it received 7% of the options by the Control children as compared with 2% from the Gifted, ($p < .05$). When the other seven curriculum areas are compared no marked differences were found although the Gifted children named Mathematics and Creative Writing proportionately more frequently than the Control Group and the reverse was the position for Nature Study, Project, etc. and Painting & Drawing.

A similar picture is presented by Table C/3 depicting for 57 of the Gifted and 52 of the Control children the pupils' most-favoured single choices. A third of the Gifted as compared with just under one-seventh of the Control Group selected Reading, a difference significant at the .001 level. Pottery & Craft are again shown to be more popular with the Control Group ($p < .05$) and here, in addition, Painting & Drawing are shown to be more favoured by the Control as compared with the Gifted pupils in the ratio 1 : 8. An almost identical percentage of children (5.5%) selected Music & Singing from both Groups. An interesting

alteration in the distribution of the choices made by the sample children occurs when the three options allowed are reduced to one. In the first case Mathematics was chosen most frequently by the Gifted children, 17.4%, (Controls 14.7%), (Table C/4), but in the second case the Control Group's choice of Mathematics was the larger percentage, (Controls 18.8%, Gifted 17.8%), (Table C/3). Nevertheless, the selections shown in the two tables present very similar patterns.

Junior Projects: The juniors alone were asked a) whether they were working on a project and b) if so, the extent to which they liked doing so. To the former question two-thirds of the Gifted juniors and three-quarters of the Control pupils replied in the affirmative; to the second, the largest proportions of both Groups (Gifted 36%, Controls 43%) replied 'Quite a Lot'. A little under one-third of the Gifted and under one-quarter of the Control pupils engaged upon project work indicated that they liked this activity 'Very Much' - these fractions represented similar proportions of the total Gifted and Control juniors (i.e., including those not engaged upon a project). The children's answers to this question are set out in Table C/2.

3) Social Relationships

Question 7 asked whether the pupils preferred the company of children, their parents or other adults. Over half of the sample in both Groups (Gifted 52%, Control 57%) elected to be with their peers. 'Other grown-up people' was favoured by almost one-quarter of both groups while only 8% of the Gifted and 15% of the Control children admitted to a preference for being with their parents. The differences in the proportions were not significant although the percentage of the Gifted was lower in respect of both being with other children and in the company of their parents. There was a rather larger variation

between the number of the Gifted (16%) and the Controls (5%) who gave no reply to this question. One Gifted child wrote in 'On my Own'.

The next question related to the children's friends and over half of the sample divided equally between both Groups (Gifted 57.5%, Controls 57%) replied that they had a special friend in their school class but comparatively fewer of the Gifted children indicated that they were one of several friends (19% as against 27%). Although the numbers are small (six and one) the proportion of gifted children who believed they have 'No special friends among children' was considerably larger than for the Control children and this difference between the two Groups might bear further investigation.

The friends of over 60% of both Groups were of the same sex as themselves, but a small number of the children (Gifted seven, Controls two) replied that they had friends of the opposite sex. The larger proportion of Gifted children found in the latter instance (8% as against 3%) may be due to the importance of mutually shared common interests overriding the more usual pattern of likes based on the child's sex. Additionally, the infants' questionnaire enquired whether the child's friend was at school or elsewhere and in response four of the Gifted but none of the Control Group indicated that this was the case.

From the foregoing it appears that 5% - 10% of the Gifted children as compared with 1% - 3% of the Control Group for social relationships were at variance with the expected pattern.

4) Home Interests

When the sample pupils were asked to select their three preferred home occupations, 'Watching TV' received the largest proportion of choices from both Groups. The options 'Reading', 'Writing Stories',

'Maths & Puzzles' and 'Making Something' were selected proportionately more frequently by the Gifted as compared with the Control children but the percentage of the latter selecting 'Drawing & Painting' was twice that for the Gifted Group, the difference here being statistically significant at the $p < .05$ level. 'Swimming & Outdoor Games' and 'Looking After Pets' were both rather more popular occupations with the Control children. Few of either Group (Gifted five, Control three) chose 'Writing Stories'. The children's choices of home occupations are shown in Table 4/1 and more fully in Table C/6.

TABLE 4/1 CHILDREN'S QUESTIONNAIRE - THREE PREFERRED HOME OCCUPATIONS
(All values are percentages)

GROUP	Watch. TV	Read-ing	Writ. Stor-ies	Draw. & Paint-ing	Maths & Puzz-les	Music	Swim. & Out door Games	Look. After Pets	Make Some-thing	Just Play or no Info.	Max. Poss-ible
Gifted	21.2	13.4	2.3	2.3	6.0	6.0	16.1	6.0	6.5	20.3	100
Control	23.4	7.3	1.6	6.3	1.6	6.3	20.8	7.8	4.2	20.8	100

There is consistency in the children's answers as to the popularity or unpopularity of particular curriculum areas in school and corresponding home occupations. The Gifted children chose 'Reading' and the pairs 'Creative Writing' and 'Writing Stories', and 'Maths. & Science' and 'Maths & Puzzles' in both contexts more frequently than did the Control pupils; conversely, 'Drawing & Painting' was selected less frequently in either situation and 'Swimming & Outdoor Games' marginally so, by the Gifted Group as compared with the Control Group. Among both sample Groups 'Swimming & Outdoor Games' received greater favour at home than at school while 'Drawing & Painting' was preferred at school than as a home occupation.

(II) PARENTS' QUESTIONNAIRES

Parent questionnaire forms were completed for 98% of the Gifted and 92% of the Control Group. The original form was redesigned and in four cases completion of the revised version could not be obtained - hence information from the first edition has been included in the statistics. Copies of both questionnaires are in Appendix 'E'.

The aspects of the child covered by the parents' questionnaire will be examined under the following headings:-

(1) Physical Facts Regarding the Child,

(2) Parents' Opinions of their Child's Attitudes to School Life,

(3) Parental Views on the Child's Friendship Pattern,

(4) The Child's Chosen Home Activities.

(1) Physical Facts Regarding the Child

The birth positions of 96% of the Gifted and 87.5% of the Control children revealed a significant difference ($p < .05$) in the proportions of first-born children in the two Groups; 55% of the Gifted as against 36% of the Control Group being in this category. The percentages of second- and third-borns among the Gifted children were smaller than those for the Control Group.

The parents' replies indicated the health of the Gifted to have been superior to that of the Control Group since 60% were said to enjoy 'Very good health' as against 31% of the latter Group. None of the sample children were shown to have either 'Fair or 'Poor' health.

The school attendance levels of both sample Groups were shown to be very good although that of the Gifted pupils was superior to the level for the Control children. The relative amounts of absence of the two Groups are shown in Table 4/2.

TABLE 4/2 CHILDREN'S SCHOOL ATTENDANCE ACCORDING TO PARENTS

(All Values %s)

GROUP	Absence During Three School Terms					TOTAL %
	None	Up to one Week	Up to one Month	Over One Month	No Inform-ation	
GIFTED	18	45	29	4	4	100
CONTROL	22	36	34	-	8	100

(2) Parental Views on their Child's Attitudes to School.

Of the parents returning completed questionnaires almost two-thirds of those referring to the 71 Gifted pupils believed their children liked school 'Very Much' whilst nearly a half of the parents of the 59 Control children did so, the difference between the two Groups being significant at the $p < .01$ level. The position of the two Groups was reversed as regards the parents answers for the alternative 'Fairly Well' as only just over one quarter of the Gifted parents selected this option while over one-third of the Control parents did so. There was a small difference between the 7% for the Gifted and 9% for the Control Group who selected 'Not Much'. The two distributions of parental replies differed significantly at the $p < .01$ level.

The parents were asked to name the parts of the school-day they believed their child liked from a list of alternatives and a sub-section invited them to specify from among their selections the one or more parts of the day their child preferred most. The phrasing of the question avoided the parents being restricted to one choice. Where a parent named more than one part of the school-day a 'unit of choice' which had been allocated to each child, was divided into fractions of a unit. The choice units recorded under the sub-section have been totalled

separately in addition to being included in the overall values for preferences for each particular part of the day under the separate headings.

According to their parents, as will be seen from Table C/9, 'Working in the classroom' was the most-favoured part of the school-day for the Gifted Group (31%) while the largest single proportion of the Control Group (34%) were said to prefer 'play-time'. These two options were reversed for the second largest proportions, 'play-time' having been named by 25% of the parents of the Gifted and 'Working in the Classroom' by 25% of the parents of the Control Group. Few children in either category were thought to favour after-school clubs in school but choice units in a ratio of approximately 3 : 1 were specified on behalf of the Gifted children as compared with the Control pupils. Although the differences in the sizes of the proportions involved was not great, that for being in the hall for music, drama, etc. was relatively larger for the Gifted, and relatively smaller for 'Sport and/or swimming' and for 'Play-time' than the corresponding values for the Control Group.

I Curriculum Preferences: From a list of activities believed to embrace most of the curriculum covered by the majority of primary schools during their school-day the parents indicated the areas they believed their children normally preferred. The responses have been examined in order to:-

(a) compare the replies of the parents of the two Groups of children, and

(b) to see to what extent the tenor of the parents' answers varied from, or were in line with, similar questions on the children's questionnaire.

The latter comparison is considered in the discussion on the content of the questionnaires in Part II of Chapter 6.

Parents' replies regarding those of a list of twelve activities they considered their child normally preferred, and from among the alternatives the options they believed their off-spring favoured most, are shown in Table C/10. The ratio of possible to stated 'likes' in respect of the Gifted Group was 1 : 1·8 while for the Control Group the ratio was 1 : 2·0, indicating that the parents of the Gifted pupils believed their children had more 'likes' among the curriculum activities than did those of the Control Group. This finding is in line with a former one where a larger proportion of the parents of the Gifted children considered that their off-spring liked school 'Very much' compared with the views of the Control children's parents.

The 'emphatic likes' named relative to the total possible on the form were in the ratio of 1 : 6·7 for the Gifted and 1 : 7·6 for the Control Group, showing that in their parents' views the Gifted children had proportionately more 'emphatic likes' too, than did the Control children.

'Reading' and 'Mathematics' were thought by their parents to be the main 'emphatic likes' of the Gifted children - followed after an interval by 'Creative Writing', 'Outdoor Games & Sport' and 'Project' in descending order of popularity. The least-favoured curriculum activities with the Gifted Group were thought to be 'Craft and Needlework' and 'Social Studies'.

'Outdoor Games & Sport' and 'Reading' were reported as the chief 'emphatic likes' of the Control Group, and to a lesser extent, 'Project' and 'Music & Singing'. Their least-favoured activities were thought to be 'Social Studies', 'Free Activity' and 'Craft & Needlework'.

A comparison of the patterns of the 'emphatic likes' in the curriculum areas considered showed that the 'Three R's' and in particular 'Mathematics'

were thought to be held in greater favour by the Gifted Group while 'Outdoor Games & Sport' was believed to be the main choice of the Control Group. The chief contrast between the curriculum area thought to be the lesser favoured was for 'Free Activity' which was named in six instances in connection with the Gifted children but only once for the Control Group.

Considering the children's reported 'total likes' ('emphatic' and 'other likes' combined) there are noteworthy differences between the percentages thought to have favoured 'Mathematics' (Gifted 12.3%, Control 8.4%), 'Painting & Drawing' (Gifted 9.3%, Control 12%) and for 'Craft & Needlework' (Gifted 3.4%, Control 5.7%).

The parents' estimates of the degree of popularity of the 'Three R's' combined for the two categories of children, have been examined separately. When the values for the stated 'likes' and the unused options were tested, parents of Gifted children were shown to name one of these three subject areas significantly more frequently ($p < .01$) than did the Control parents. If the values for 'emphatic likes' for the 'Three R's' solely are tested, the difference between the percentage of the options utilised by the two Groups of parents is again significant at the $p < .01$ level. One may conclude that the 'Three R's' were thought to have been more popular with the Gifted as compared to the Control children.

II Parental Assistance with School-work: The parents' replies regarding the amount of additional instruction their children received is set out in Appendix 'C', Tables 11(a) and 11(b).

The Gifted children's parents indicated that their children were taught 5% of the regular weekly hours the questionnaire allowed while the corresponding percentage for the Control pupils was 17.3% For the

'Occasional monthly half-hour' the Gifted pupils were shown as receiving 8.5% of the total possible and the Control children 21.7%. The differences in respect of both the amounts of regular weekly teaching and of the occasional instruction received by the two Groups of children were each such as to be significant at the $p < .001$ level.

The gaps between the percentages of the utilised as against possible teaching time were similar:-

Regular Weekly Instruction:

Gifted Group 5.1%)
Control " 17.3%) difference 12.2%

Occasional Monthly Instruction:

Gifted Group 8.5%)
Control " 21.7%) difference 13.2%

It is difficult to explain the closeness of the gaps between the percentage values here unless they were the result of chance.

The five subjects listed on the questionnaire were:-

Reading
Handwriting
Composition or stories
Spelling
Maths.

In respect of both a regular weekly hour or for an occasional monthly half-hour, for each of the options the percentage of the possible teaching periods stated by the parents to have been utilised was in all cases smaller for the Gifted than for the Control Group. Tables C/11(a) and C/11(b) set out the respective values obtained. The results of statistical tests show that for each of the five subjects there is a difference between the two Groups for regular weekly teaching at the $p < .05$ level of significance; for the two distributions formed by the two sets of five values for the five subjects there is a difference

between the Gifted and Control Group significant at the $p < .001$ level. As regards the occasional half-hour per month, the differences between the Groups in respect of 'Reading' and 'Spelling' were at the $p < .001$ and $p < .05$ levels respectively. Here the differences between the two sets of five values for the teaching periods utilised by the respective Groups of parents as against the residual number of periods possible on the form, is significant at the $p < .001$ level.

The parents' responses regarding 'other help' with their off-springs' school-work showed the reverse pattern - 85.9% of the replies referring to Gifted pupils being in the affirmative as against 64.5% for the Control Group; the corresponding negative replies were 8.5% and 22.0% respectively. The difference here between the two Groups is significant at the $p < .01$ level.

The parents' replies covered a wide range when asked what form their assistance took with their children's school-work. About two-thirds of the Gifted children's parents indicated that they gave their off-spring general help and encouragement, particularly with the use of a library, by assisting them with the collection of material for projects and by answering the children's questions. About a fifth of the parents gave more specific help with the pupils' school-work while only 8.5% did not assist.

Two-thirds of the Control children's parents too replied that they provided general assistance with their children's school-work by answering their questions and supplying general encouragement and help with project work. 10% of the parents provided aid, the form of which was unclear, and 9% supervised home-work, etc. Over a fifth of the Control children's parents, a proportion twice as great as in the case of the Gifted children,

gave a negative reply to this question.

The responses of the two sets of parents on additional teaching and other assistance with their off-spring's learning indicated an unexpected difference in approach to their children's school-work, which is supported by the statistical evidence. The reasons for such variation are unclear; it may be that the two Groups of parents were drawn from populations with varying sub-cultures in respect of education in spite of the efforts made to obtain children for the Gifted and Control samples paired on socio-economic background. Alternatively, and perhaps more probably, the Gifted children may evoke from their parents different responses than do their average-bright contemporaries.

(3) Parental Views on their Children's Social Relationships

Approximately equal proportions of the parents of both Groups indicated that they believed their child to be:-

(a) one of several friends at school (60% approximately), or that

(b) their child had a special friend at school (22%)

The main difference found here was between the 7.5% of the Gifted pupils' parents as compared with the 3% of those of the Control Group who considered that their off-spring had no particular friend. While the number of children here was small (Gifted five, Control two) the proportions of apparent isolates found among the two Groups were in the ratio of 2.5 : 1.0, a difference which might be worthy of further investigation in a subsequent enquiry.

The majority of both Groups of parents (61.5% Gifted, Control 66%) were of the opinion that their off-spring preferred the company of other children rather than that of adults - but over twice as many Gifted

children's parents as compared with those of the Control pupils believed that their off-spring preferred the company of peers a year or more older than themselves ($p < .05$). Doubt as to the company preferred by their off-spring was expressed for 30% of the Gifted and 20% of the Control children, a variation between the two Groups which seems noteworthy. Only one Gifted and two Control children were thought by their parents to prefer adult company.

(4) Parents' Replies on Children's Home Interests

The children's general and special home interests as revealed by their parents are set out in Tables C/15 and C/16; types of play and the parents' general remarks are presented separately in Tables C17 and C/18 respectively. As may be seen the difference between the two Groups of children in respect of their special interests was greater than for general interests - the explanation of the variation here is partly statistical as when the special interests have been extracted the residual options are less numerous.

According to the parents the four special interests of both Groups of children were 'Watching TV', 'Reading', 'Making Something' and 'Swimming & Outdoor Games', but the order of popularity in which these were specified differed between the two Groups. 'Reading' has been named significantly more frequently ($p < .01$) by the parents of the Gifted than of the Control children, whereas 'Swimming & Outdoor Games' were reported as the more favoured by the Control parents, the difference between the two Groups here being at the $p < .05$ level. 'Making Something' was rated third and 'Watching TV' fourth in order of importance by the Gifted children's parents. For the Control children the first and second most important occupations named were 'Swimming & Outdoor Games' and 'Watching TV'; third and fourth place were taken by 'Reading' and 'Making Something'.

The other home activities shown as being more favoured by the Gifted than the Control children were:- 'Doing Puzzles' together with 'Mathematical Puzzles' where, although the absolute numbers were small, the difference between 7.3% and 1% for the respective Groups was marked.

Few parents showed either 'Music' (Gifted three, Controls six) or 'Dancing' (Gifted one, Controls three) as a main interest but although the numbers involved were very small it may be noted that the proportions of Gifted children to Control pupils thought to have a special interest in these occupations was in the ratio of 1 : 2 and 1 : 3 respectively. For the remaining occupations listed, 'Creative Writing', 'Drawing & Painting', 'Looking After Pets' and 'Drama' - the values were all small and there was little difference between them for the two Groups.

No information was obtained as to the types of television programme preferred by the sample children, nor as to the type of music or dancing in which the children were believed to be interested, nor whether they practised or merely appreciated the performances of others in these arts.

The general interests the parents thought were held by their offspring were named from the residual list of occupations after the main interests had been removed.

The chief difference between the two Groups according to the parental selections of 'General Interests' were that 'Music' received twice the percentage of nominations for the Gifted as for the Control Group. At the same time, 'Watching TV' was shown as the most popular 'General Interest' held by the Gifted Group followed by 'Reading' and 'Making Something'. For the Control Group the three largest selections in decreasing order of importance were 'Making Something', 'Watching TV' and 'Reading'. Although more popular than with the Control Group, 'Drama'

was the most rarely named occupation for the Gifted Group - likewise, 'Music' was the least-favoured for the Control children. The values for the occupations named by the parents as being of 'General Interest' are set out in Table C/15.

The parents of the Gifted children utilised 54% of the total options of home pursuits provided on the questionnaire whereas for the Control Group the value was 49%, revealing a greater breadth of reported interests for the Gifted as compared with the Control children, the difference here being significant at the $p<.01$ level. The difference may also be expressed as a ratio of stated to total recordable 'interests' for the Gifted of 1 : 1.84 and for the Control children of 1 : 2.13.

As shown on Table C/15 the quotients of the stated to the total recordable 'main interests' for the Gifted and Control Groups are 1 : 7.74 and 1 : 8.42 respectively.

The data on the children's home interests'are considered from an alternative viewpoint in Table C/16. Taking as a maximum the nomination of all the listed occupations as a home activity for the total sample, percentage values are given for each of the listed occupations representing the frequency with which the activity was named by the parents. Such an examination of the data reveals that 94.4% of the Gifted as compared with 72.9% of the Control children were said to read at home, a difference between the two Groups significant at the $p<.001$ level; the gap between the values for the children in the two Groups said to engage in mathematical puzzles was at the same level of significance. The reported greater popularity of both 'Drama' and 'Music' with the Gifted Group as compared with the Control Group was significant at the $p<.05$ level. There were only small variations between the frequencies with which the other home activities were named by the two different sets of parents.

Play: According to their parents the play of both sample Groups covered a wide spectrum of activities which have been classified in Table C/17. There was a general similarity in the play patterns displayed, the chief differences being in the intellectual quality of the play and of emphasis within the classifications listed. Contrasts were found in categories (8) and (9) where interests such as 'Debating Society', etc., and 'Reading, studying and thinking' were not matched by similar mental reflections on the part of the Control Group. The latter Group's reported interest in 'Making little books' and 'Writing stories' appeared to indicate less intellectual perspicacity but the Control children seem to have been more practical and helpful in undertaking small jobs either voluntarily or for pay. Under the heading 'Technical' the Gifted children's pre-occupation with time-tables and maps might be construed as having greater intellectual content than similar activities on the part of the Control pupils. In other occupations such as imaginary games, interest in the environment, music, indoor and outdoor games, there appears little difference between the nature of the interest ascribed to the two Groups of children.

Parents General Comments: The diverse observations made by the parents indicated that Gifted children were not a 'type' but varied widely. Table 4/3 attempts to classify the parents' contributions into continuums relating to introvert-extrovert personality type, the degree of social and psychological adjustment and according to the extent of physical disabilities. Observations covering a number of topics have been divided between the appropriate headings although concerning a particular child. Frequencies for repeated remarks have not been given because of the difficulty of interpreting and classifying exactly the parents' meaning in their comments - with the exception of the comments relating to isolates and preferred teaching method which are shown in Table C/18.

TABLE 4/3 PARENTS' COMMENTS

(1) Child's Personality and General Characteristics

GIFTED GROUP	CONTROL GROUP
Extrovert, bossy, rarely bored.	Talks readily to herself and strangers. Expressive in movement and music.
Very sociable with all ages: likes conversation.	Mainly interested in playing with others.
An all-round personality with a lively interest in most things.	Needs other's company.
Enjoys most things, very helpful at home.	Likes afternoons and evenings best with group of friends; does not like being alone.
Enthusiastic about everything undertaken.	Has great ability to concentrate - impatient with those who are not quick.
Lovable, demanding, excitable, agile, sleepless.	Thoroughly enjoys all aspects of life.
Always occupied, reliable.	Friendly nature, gets on with all ages.
Likes to organise.	Likes activity.
Enquiring disposition.	Untidy.
Enjoys 'research'.	Reads sports' pages of newspaper.
Impatient of expression in practical form.	Likes doing nothing specific; prefers children one year older.
Likes to be on his own - gets on with people of all ages.	Seldom initiates play, but is an enthusiastic follower.
Capable, very critical of others.	Quiet and self-contained; does not tell about school.
Home and school kept separate, parents told little of school interests.	A quiet child with plenty of patience.
Basically a loner, but flexible.	Enjoys his own company.
A quiet, serious child.	A shy boy who needs pushing.
Prefers own company.	Reticient and dreamy.
Slightly introverted.	
Easily bored.	
No class friends.	

TABLE 4/3 continued PARENTS' COMMENTS

(2) Social and Psychological Adjustment

GIFTED GROUP	CONTROL GROUP
Likes helping at home.	Settling down after frequent changes in school - parents in Forces.
School best part of day.	Likes teacher's individual attention.
Was unhappy at school, but now happy.	Holds back if not sure is right.
Content to go to school, but usually would prefer to stay at home.	A feeling that the teacher picks on him has deterred him from going to school.
School curriculum comes nowhere near needs.	Likes to work on his own.
Regular tantrums.	Likes to play alone.

(3) Physical Circumstances

GIFTED GROUP	CONTROL GROUP
Eats and drinks well.	Adopted.
Adopted.	Diabetic.
One parent.	Asthma.
Usually clumsy - difficulty in co-ordinating hands and eye.	Grandparent dying in house with terminal disease.
Physical action of writing difficult.	
Brain damage at birth.	

The Gifted-designated isolates consisted of five juniors and one infant. In most cases the parents also stated that their child related well with people. Two Control infants were said by their parents to have favoured working on their own while another was reported as having liked to play alone. Nine of the Control children's parents held that their children preferred the teacher addressing the class as a unit as a method of learning - no such remark was made regarding any of the Gifted children.

The parents volunteered their remarks regarding teaching and working methods there being no question on these on the questionnaire. Accordingly, it is surprising that thirteen parents (Gifted two, Controls eleven) elected to make comments on these points. The children's questionnaire which did include a question upon the pupils' preferred method of working, was completed in school and was not seen by the parents.

III - TEACHERS' QUESTIONNAIRE

The generous help contributed by the children's teachers resulted in 100% completed questionnaires being returned for the sample. The replies are considered in sequence under five headings and refer to the child's:-

(1) Physical circumstances relative to that of the school class,

(2) Physical development, health and school attendance,

(3) Standard and nature of performance in school-work.

(4) Social relationships within the school class,

(5) Teachers' general comments.

A copy of the questionnaire used will be found in Appendix 'E'.

(1) Child's physical Circumstances

Confirmatory data were requested on the child's sex and chronological age. The latter for over half the sample (Gifted 56%, Control 59%) was reported as being average for the school classes involved while similar proportions of both Groups (Gifted 12%, Controls 14%) were about six months older, or six months younger (Gifted 18%, Controls 17%). Seven of the Gifted children (9.6%) but only one Control child (1.6%), were a year or more below the class average. No reply was given here for eight Gifted and three Control children.

A comparison of the heights of the sample children with the averages for their school classes showed the Gifted to be shorter than the Control Group - a fact partially explained by the larger number of Gifted children below the average class age. There was little difference between the reported weights for the two Groups of children but no reply was given here for 14% of the Gifted and 6% of the Control children. Table C/21 gives comparisons between the sample's physical development with that of their peers.

The teachers' replies showed similarity between the physical characteristics of the Gifted and Control Groups, the chief contrasts being that seven Gifted as against one Control child were a year or more below the average class age and the mean height of the Gifted children was less than that of the Control Group. Data regarding the children's actual heights and weights were not available as the majority of the schools involved did not keep records of these measurements. A proportion of the children were weighed and measured in the schools by the investigator but the data has not been included as it is incomplete.

(2) Physical Development, Health and School Attendance

The teachers reported the health of the sample children as 'good' or 'very good' and only two Gifted and three Control pupils were shown to have had 'poor' or 'very poor' health.

The school attendance levels were high for the majority of the sample. The ratio of 1 : 2 for the percentage of the Gifted as compared with that of the Control children shown as having had full attendance is noteworthy.

TABLE 4/4 SCHOOL ATTENDANCE

Absence during previous 12 months	Gifted Gp. No.	Control Gp. No.	% Gifted Gp.	% Control Gp.
None	5	8	6.8	12.5
One week or less	42	32	57.5	50.0
One month or less	21	20	28.8	31.2
Up to one term	1	-	1.4	-
No information	4	4	5.5	6.3
TOTAL	73	64	100.0	100.0

(3) Standard and Nature of Performance in School-work

The main emphasis in the teachers' questionnaire was on various aspects of the children's school-work. The responses have been examined under the following headings:-

(i) classroom organisation and the modes in which the pupils were taught;

(ii) degree of attentiveness in class;

(iii) average levels of the sample's achievements in class-work and variation in performances with subject matter;

(iv) classroom activities at which the children performed 'best' and 'poorest';

(v) standards of achievement at games and swimming.

(i) Classroom organisation and the modes in which the pupils were taught: Distributions of the modes in which the children learnt in the classroom are shown in Table 4/5. The values showed 40% of the Gifted and 64% of the Control pupils worked at a table with four or five others, the difference between the Groups being significant at the $p < .01$ level. By contrast, a larger section of the Gifted, 53% , studied on his/her own compared with 30% of the Control Group, the variation in these proportions being significant at the $p < .05$ level. For both Groups the percentages of pupils working with the class as a single unit was small (Gifted 7%, Controls 5%).

TABLE 4/5 CLASS-ROOM MODE OF WORKING

CLASS ORGANISATION	GIFTED GP. No.	CONTROL GP. No.	% GIFTED GP.	% CONTROL GP.	CHI-SQ.	SIGNIFICANCE
Working as a single unit	5	3	7	5	.03	-
4 or 5 children at a table	29.5	41	40	64	6.72	$p < .01$
Working on own	38.5	19	53	30	6.52	$p < .02$
No information	-	1	-	1	-	-
TOTAL	73	64	100	100		

(ii) Degree of Attentiveness in Class: Over half the Gifted children, a proportion twice that recorded for the Control Group, were reported as being 'very attentive' in class while larger percentages of the Control children were shown as being of 'average' attentiveness and, for the much smaller

sections involved, more were recorded as 'inattentive', etc. For three of the comparisons set out in Table 4/6 the differences between the Groups are significant at the $p < .01$, $p < .01$ and $p < .05$ levels respectively.

TABLE 4/6 DEGREE OF ATTENTIVENESS IN CLASS

BEHAVIOUR	GIFTED GP. NO.	CONTROL GP. No.	% GIFTED GROUP	% CONTROL GROUP	CHI-SQ.	SIGNIF-ICANCE
Very attentive	47.5	19	65	30	15.70	$p < .01$
Average attentiveness	23	37	31.5	58	8.55	$p < .01$
Inattentive	1	8	1.25	12	5.19	$p < .05$
Disciplinary problem	.5	-	1	-	-	-
No information	1	-	1.25	-	-	-
TOTAL	73	64	100.0	100.0		

(iii) Average Levels of the Sample's Achievements in Class-work and Variations in Performance with Subject Matter: Values in respect of the teachers' replies regarding the standards of work reached by the sample children in comparison with their peers are shown in Table 4/7. The considerable variation in the distributions of the performances of the two Groups is discussed in Chapter 6, (Page 115).

TABLE 4/7 STANDARDS OF WORK OF SAMPLE GROUPS RELATIVE TO THAT OF THEIR SCHOOL CLASSES

GROUP	NO.	NUMBER OF CHILDREN				PERCENTAGES			
		Below Aver.	Average	Above Aver.	One Yr & Over	Below Aver.	Average	Above Aver.	One Year & Over
GIFTED	73	2	4	45	22	2.7	5.5	61.6	30.1
CONTROL	64	12	36	15	1	18.8	56.3	23.4	1.5
HIGH IQ SUB-GP	31	2	1	17	11	6.5	3.2	54.8	35.5
LOW IQ SUB-GP	41	12	25	4	-	29.2	61.0	9.8	-

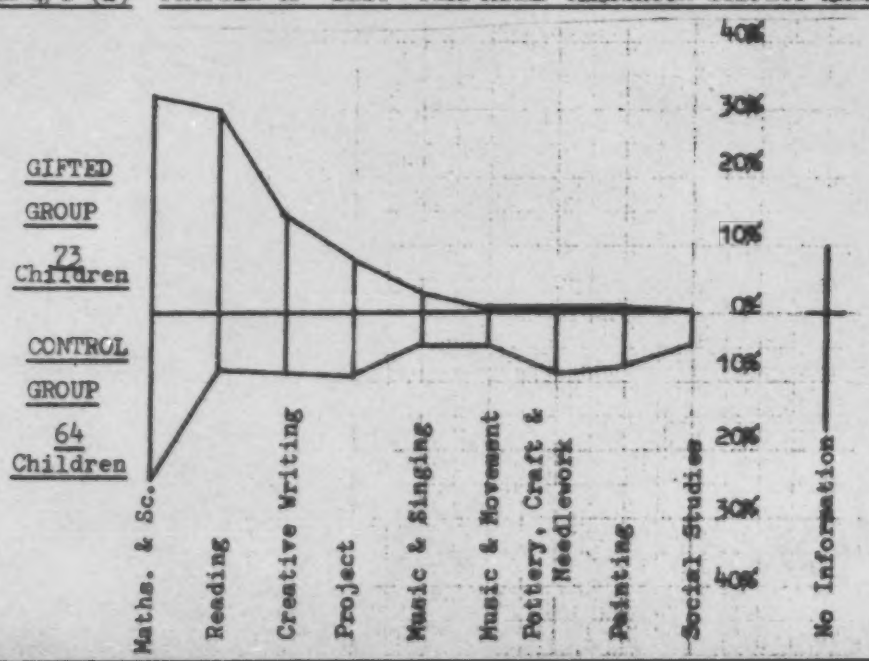
The teachers' reports indicate similarity between the two Groups regarding variation in performances with subject matter, 80% of the Gifted and 77% of the Control Group's standards of work being judged on a level while for 20% of the Gifted and 22% of the Control Group these were considered to be uneven. Answers were omitted for 2% of the Control children.

(iv) Classroom Activities at which the Children Performed 'Best' and 'Poorest':

The resultant distributions of the frequencies of the alternative curriculum areas named by the teachers from the list provided as being performed 'best' and 'poorest' by the sample pupils are given in Tables C/22 and C/23. Profiles of standards of performance depicting the percentage values for each of the selected subject areas; and the proportions of the Groups for which no information was supplied, are shown in Figures 4/1 (a) and 4/1 (b).

The profile for the Gifted Group indicates great variation between the percentage values for the different subject areas. 32% and 30% respectively of the Gifted children were reported to have 'Maths & Science' and 'Reading' as their 'best' performed subject areas; while for each of 'Social Studies', 'Painting', 'Pottery, Craft & Needlework', and 'Music & Movement' such was the case for 1% or less of the Gifted pupils. 14%, 6% and 2% of the Gifted sample were stated to achieve 'best' in 'Creative Writing', 'Project' and 'Music & Singing' respectively.

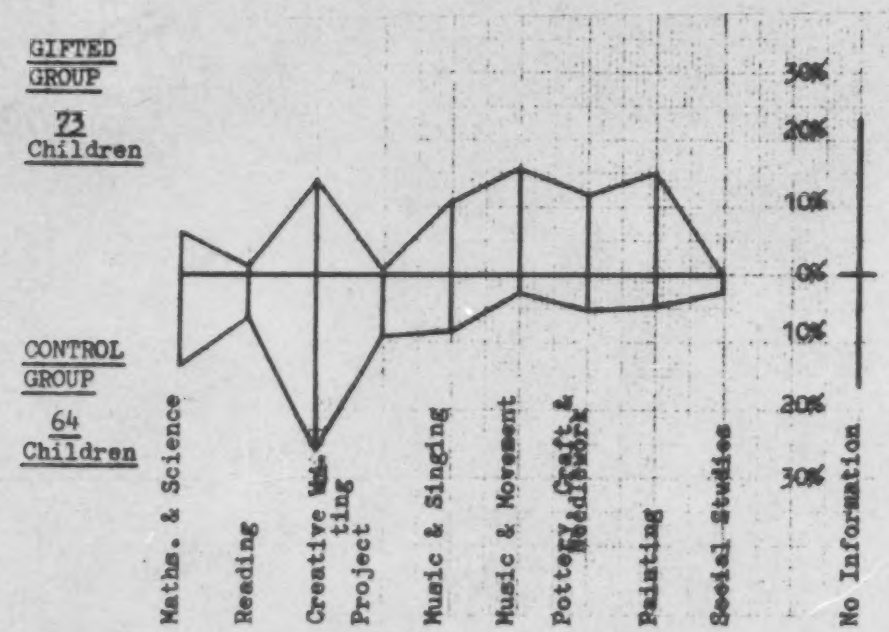
FIGURE 4/1 (a) PROFILE OF 'BEST' PERFORMED CLASSROOM SUBJECT AREAS



There was far less variation between the percentages of the Control pupils said to perform 'best' in particular subject areas. For three of the nine values there was 5% or less difference in the number of the Control children stated by their teachers to have performed 'best' in each of the specific subject areas - while 6% - 10% inclusive of the Control Group were reported to have performed 'best' in five further subject areas. 'Maths & Science' was the exception as 24% of the Control children were said to produce their best work in this area.

'Reading' was pronounced by the teachers as the 'best' performed classroom subject area for a significantly larger proportion ($p < .01$) of the Gifted as compared with the Control pupils - conversely, for the craft subjects combined a significantly smaller proportion of the Gifted Group is mentioned.

FIGURE 4/1 (b) PROFILE OF 'POOREST' PERFORMED CLASSROOM SUBJECT AREAS



'Project' was named as the 'best' performed subject area for similar percentages of both Groups; for each of 'Social Studies', 'Music & Movement' and 'Music & Singing' the proportions of the sample Groups were small but for all three cases the number of the Gifted pupils said to be 'best' at one of these subject areas fell below that for the Control Group.

The teachers reported that larger fractions of the Gifted Group compared to the section of the Control Group had as their 'best' subject area 'Maths & Science' or 'Creative Writing'. The frequencies for the 'Three R's' combined represented the 'best' subject areas for 75% of the Gifted and 42% of the Control pupils, there being a statistically significant difference here at the $p<.01$ level.

The distributions formed by the two sets of values in respect of the numbers in each Group pronounced to have performed 'best' in the separate subject areas have been examined by use of the chi-square test and the difference between them was found to be significant at the $p< .05$ level. Other subject areas represented by small values were combined as shown in Table C/22.

A smaller proportion of the Gifted children as compared with the Control Group was found to have as their most poorly performed subject areas the following:-

Reading
Creative Writing
Arithmetic
Project
Social Studies
Music & Movement.

The difference between the values for the two Groups was sufficient to be of statistical significance at the $p<.05$ level for 'Music & Movement'.

For both sample Groups 'Creative Writing' was the subject area which obtained the largest frequencies as the most 'poorly' performed, it being named as such for 14% of the Gifted and 27% of the Control Group.

When the values for the most poorly performed subject areas were combined for related parts of the curriculum, the gaps between values for the proportions in the two Groups increased. Accordingly, for the Gifted Group the combined value for the 'Three R's' was significantly lower at the p .01 level than for the Control Group, as it was too for the values for the combination 'Project' and 'Social Studies'.

Conversely, relatively larger proportions of the Gifted as compared with the Control Group were shown to perform most poorly at the combined subject areas:-

(a) 'Painting' and 'Pottery, Craft & Needlework', and

(b) 'Music & Movement' and 'Music & Singing',

for both of which the gap between the two Groups was significant at the $p < .05$ level.

The values for the 'poorest' performed subject areas by the two Groups respectively are shown in Table C/23 and Figure 4/1 (b) shows the corresponding profiles. There was less variation for the Gifted pupils across the curriculum than was the case for their 'best' performed subject areas; the reverse situation appeared for the Control Group where there was a large variation due to 27% of the Control pupils being reported 'poorest' at 'Creative Writing'. For 23% of the Gifted and 17% of the Control Group the teachers omitted to answer the less usual question regarding the 'poorest' level of classroom attainment.

There was considerable consistency between the two profiles of the 'best' and 'poorest' subject areas. For the Gifted Group a large

proportion were shown to perform 'best' in one of the 'Three R's' while small percentages were shown to have attained poorly in this curriculum area. Likewise, few of the Gifted were shown as performing 'best' at the craft subjects while the profile for their lowest levels of achievement showed a relatively large proportion of the Gifted Group. There was consistency too for the 'best' and 'poorest' subject area profiles of the Control Group.

(v) Standards of Achievement at 'Games & Swimming': The teachers rated relatively fewer of the Gifted children as 'very good' at 'Games & Swimming' and a larger proportion, and in comparison with the Control Group a greater percentage, as being 'poor' at such activities, the latter difference being significant at the $p < .01$ level. The difference between the distribution of quotients for the two Groups was also calculated to be at the same level of probability. The teachers' replies are tabulated in Table 4/8.

TABLE 4/8 TEACHERS' RATINGS OF SAMPLE CHILDREN'S RELATIVE ACHIEVEMENTS IN 'GAMES & SWIMMING'

STANDARD AT BOTH 'GAMES & SWIMMING'	Gifted Gp.No.	Control Gp. No.	Gifted Group %	Control Group %	Chi-Square =	SIGNIFICANCE p<
Very Good	14	19	19	30	2.06	-
Average	36.5	40.5	50	63	2.44	-
Poor	18.5	4.5	25	7	6.93	0.01
No information	4	-	5.5	-	-	-
TOTAL	73	64	99.5	100		

Comparison of distributions:-

Gifted Group: 14, 36.5, 18.5, 4
Control Group: 19, 40.5, 4.5, 0

12.95 with 3d.of f. $p <$ 0.01

(4) Social Relationships in School

The teachers' replies regarding the Gifted children's popularity within their school classes showed these pupils to have been less favoured than were the Control Group - relatively smaller percentages being 'very popular' or of 'average popularity' whereas the fraction described as 'not very popular' or as 'isolates' was greater than for the Control Group. When the latter two categories were combined the difference between the Gifted and Control Groups was significant at the $p < .05$ level. The teachers' responses are set out in Table 4/9.

The majority of the Gifted and Control children were shown to be one of a group of friends in their respective school classes but the percentage was less for the Gifed Group. More limited sections of the sample children were said to have one special friend among their peers and here the Gifted proportion was of the two relatively the larger. The percentages 6% and 3% of the Gifted and Control Groups respectively shown to have no friends were small but the proportion of Gifted to Control children which was in the ratio of 2 : 1 is noteworthy.

TABLE 4/9 TEACHERS' RATINGS OF SAMPLE CHILDREN'S POPULARITY

POPULARITY GRADING	GIFTED GP. NO.	CONTROL GP. NO.	GIFTED GROUP %	CONTROL GROUP %	CHI. SQ.=	SIGNIF-ICANCE
Very Popular	17	17	23	27	0.20	-
Average Popularity	44	45	60	70	1.51	-
Not very Popular	10	2	14	3	3.54	-
An isolate	2	-	3	-	-	-
TOTAL	73	64	100	100		
Combined Values 'Not very popular & 'Isolate'	12	2	17	3	4.94	0.05

Comparison of Distributions:-

Gifted Group: 17, 4, 10, 2)
Control Group: 17, 45, 2, 0) Chi-square with 3d. of f. = 6.777 — Not Significant

There were no marked differences between the two sample Groups in respect of the proportions of the children said to be one of several friends or to have a special friend in a higher or lower class - the chief difference was between the 45% of the Gifted and 34% of the Control pupils said to have no friends in such school classes. Details of such friends reported are given in Table C/24. No answers were given for 18% of the Gifted and 23% of the Control Group. The information regarding the children's friends in other school classes may not have been available to their own class teachers.

(5) Teachers' General Comments

The teachers made remarks for 34 of the Gifted and 25 of the Control children, that is for less than 50% of either Group. They referred to proportionately more boys as compared to girls in both Groups.

A wide range of matters connected with the children concerned were contained in the teachers' comments and these - as with the parents' remarks - underlined the fact that intellectually gifted children vary considerably in their other characteristics. For purposes of examination the comments have been subsumed for each Group separately under five headings in Table C/20. Classification of the material has necessitated comments relating to some individual children being divided so as to include the relevant parts in the appropriate section of the table.

(i) Physical handicaps: The Gifted pupils were shown as having rather more physical handicaps than did the Control Group. 'Spastic' and 'asthma' are conditions which might be expected to impinge considerably upon a child's life style.

(ii) Personality: Comments under 'General Personality Characteristics and Adjustment' related to seventeen children in each Group. The diverse

features mentioned varied in the extent to which they normally received social approbation. The teachers seem to have suggested that six of the Gifted pupils were very likeable or helpful. Among the Control children seven appeared to have been happy and friendly and another five were considered to be pleasant although possibly quieter. The foregoing comments on the part of the teachers seemed to suggest positive approval for six of the Gifted as compared with twelve of the Control children.

A neutral remark was appended to four of the Gifted; for a further child complexity was indicated in that the boy was said to have been both a bully and to have helped his classmates while he himself tended to be of a nervous disposition. For the remaining five Control children the comment about one was neutral but for the other four the implication was that there appeared to be an adjustment problem such as immaturity, moodiness, timidity, etc. The teachers' conclusions were unfavourable for four of the Gifted children who were considered to be 'precocious', 'self-centred', 'withdrawn' and 'worried'.

(iii) School-work: The teachers' comments on performance in school-work covered 31% of the Gifted Group as compared with 19% of the Control pupils. The observations referred to twenty-six children for eleven of whom their school-work was said to be markedly superior to that of their peers, the terms 'excellent', 'exceptional' and 'enthusiastic' appearing in the comments; two of the eleven were said to be original thinkers and one to have been particularly interested in problem-solving. The standards of work of six more of the Gifted pupils were reported as 'good' or 'very good' and the children were said to have had a mature vocabulary, a broad general knowledge background, etc. A further three were recorded as having an interest or ability in 'music', 'Drama' and/or

'Sport' while a musical child, with poor health, worked in the classroom during playtime. One Gifted girl was said to have liked working with a 'high I.Q. friend'; an unexpected remark relating to another Gifted child was that she was "average but worked hard in class". The teacher of a Gifted boy seemed dissatisfied with him when she commented that he had to be interested "to put a lot into his school-work" - as did the teachers of the last two individuals among the twenty-six who described two Gifted pupils as an 'underachiever' and as 'lazy, making a minimum amount of effort', respectively.

No brilliance was indicated by the teachers among the Control Group but two of the pupils were considered creative, one in project work and the other in 'writing stories' - two other children were thought to have been 'good all-rounders'. One Control boy was described as 'good at needlework'. For six Control pupils the teachers' comments suggested some dissatisfaction, the children being said to have been 'inattentive', 'careless', 'Making insufficient effort with their work', etc. and for one further pupil disapproval appeared implied by the remark 'he prefers football to academic work'.

(iv) Popularity: The teachers estimated the children's popularity with their school peer groups for only six of the Gifted and four of the Control Group. Of the Gifted pupils, one child was described as 'sociable', two as having few friends, while the remaining three appear to have been without friends. By contrast, three out of the four Control children were said to be well-liked and sociable, only one preferring his own company.

(v) Parents; The teachers commented upon the extent of parental support for six of the Gifted pupils. The home backgrounds of two of

these children were thought to be good, for three more the parents were said to have a particular interest in the child's education and for only one Gifted child was the home background though to be deficient - the teacher added that the child's intelligence was revealed nevertheless. Reference was made to the backgrounds of only two of the Control children, for one of whom it was described as being 'very good' while the second referred to a handicapped sister and resultant pressures in the home.

CHAPTER 5

HEAD TEACHERS' VIEWS ON THE INTELLECTUALLY ABLE CHILD

The subjective views of head teachers were sought regarding the existence and needs of those children they considered to be the intellectually most able 1% - 2% in general ability, without taking into account other specific talents.

A Local Education Authority area of limited size was selected such that, with the small resources available, all the primary schools within it might be approached so that, apart from the initial selection of the area itself, subjective choice of the schools to be involved and the views to be expressed would be avoided.

The assistance of the Chief Education Officer concerned, his Chief Advisor for Primary Schools and staffs in the Education Office and in his schools is greatly appreciated, without which this part of the study could not have been undertaken. In consultation with the Chief Advisor a questionnaire addressed to the head teachers was drawn up and was sent to the schools through the Education Office together with a letter from the investigator explaining the purpose of the enquiry and expressing the interest of the Chief Adviser in its outcome. 149 schools were approached of which 134 were asked to complete and return the questionnaire by post and 15 schools, a random 10% sample of the total, were sent a variously worded letter, without the questionnaire, in which they were asked to grant the investigator an interview. This procedure was adopted since it was to be expected that a proportion of the circulated questionnaires would not be returned and by comparing the 10% replies of

the schools visited to those received by post it would be possible to estimate whether the viewpoints of the head teachers not returning the postal questionnaires were likely to differ markedly from those which did so. The response is shown in Table 5/1.

TABLE 5/1 RESPONSES OF HEAD TEACHERS REGARDING TOP 1%-2% OF INTELLECTUALLY ABLE CHILDREN

REQUEST FOR:	No. Approached	No. of Replies	% of Total
Completion of postal questionnaire	134	105	78.4%
Interviews	15	No.agreed 15	100%
Total Requests	149	120	81%

The questionnaire distributed was designed with three objectives in mind:

(a) Obtaining a maximum response,

(b) Elucidation of information in a statistically viable form, and

(c) Open-endedness so that teachers might express their views as they wished.

The form is composed of seven questions the first of which requests factual information about the school concerned. The remaining questions sought the numbers of children in the top 1% - 2% of general intellectual ability thought to be in the school in question, the head's views as to whether such pupils have special needs and if so, whether these were, or would be, adequately catered for.

The Questionnaire: Facts supplied in answer to Question 1 by 120 respondent schools with a total pupil roll of 20,403 are set out in Table 5/2. Primary schools catering for all different combinations

of age levels are included, schools with less than 50 to over 600 on their pupil rolls and those of different status. One head teacher replied only that his school was not yet open; this form will be excluded from further consideration.

TABLE 5/2 DETAILS OF RESPONDENT SCHOOLS

SIZE:

Pupils on Rolls	No. of Schools
Under 100	47
100 - 199	32
200 - 299	17
300 - 399	14
400 and over	9
Total	119

AGE LEVEL

Type	No. of Schools
Infant	17
JMI	87
Junior	11
Lower	4
Total	119

TYPE OF SCHOOL

	No. of Schools
County	87
Voluntary Controlled	17
Voluntary Aided	15
Total	119

Question 2: Do you consider that you have any children in your school in the top 1%-2% of general intellectual ability? ...YES/NO

Equal proportions of the 119 responding schools (49.5%) replied in the affirmative as in the negative and only one gave no reply to this question as shown in Table 5/3. A lesser proportion of the small schools (42%) than was the case with those having a pupil roll of over 400 (75%) replied in the affirmative. The small schools involved a total pupil roll of only 2,378 whereas the pupil roll of the large schools was 4,277.

TABLE 5/3 HEAD TEACHERS REPLIES TO QUESTION 2

Size of Pupil Roll	REPLY			Total No. Schools
	Yes	No	None	
0 - 99	19	28	-	47
100 - 199	16	16	-	32
200 - 299	9	8	-	17
300 - 399	9	5	-	14
400 and over	6	2	1	9
TOTAL	59	59	1	119

Question 3: Do you think the top 1%-2% of children in Intellectual ability would be, or are, catered for adequately in your own school:

(a) as regards the development of their intellectual potential? ..... YES/NO
(b) Social development? ..... YES/NO
(c) Physical development? ..... YES/NO

Other Comments:

The replies of the 119 head teachers to the three aspects of the above question are set out in Table 5/4. The great majority of the replies, irrespective of the size of the pupil roll, are in the affirmative indicating that most of the head teachers believed that such children were, or would be, adequately catered for in their schools, the proportions being approximately 80% in respect of intellectual and physical requirements and an even larger section as regards their social development.

TABLE 5/4 HEAD TEACHERS' REPLIES TO QUESTION 3(a) (b) and (c)

Size of Pupil Roll	REPLIES								
	(a) Intellectual			(b) Social			(c) Physical		
	Yes	No	None	Yes	No	None	Yes	No	None
0 - 99	37	5	5	38	5	4	34	9	4
100 - 199	26	5	1	31	-	1	30	1	1
200 - 299	15	2	-	16	1	-	15	2	-
300 - 399	10	3	1	10	2	2	8	3	3
400 and over	6	2	1	8	-	1	7	1	1
Total	94	17	8	103	8	8	94	16	9
%	79.0	14.3	6.7	86.6	6.7	6.7	79.0	13.5	7.5

The smallest and largest pupil rolls of the 119 schools numbered 9 and 658 respectively. Since the schools differ so greatly in pupil roll it seemed possible that there might be a marked difference between the viewpoints of the head teachers of the small as compared with the large schools. Furthermore, the head teachers with a pupil roll of 400 or over as against those with less than 100 were responsible for a far larger number of pupils so that their views might be considered to be of greater relative importance. For these two reasons the head teachers' replies have been examined additionally, weighted for the size of the pupil roll, the weights being devised as shown in Table 5/5.

TABLE 5/5 WEIGHTS FOR HEAD TEACHERS' REPLIES ACCORDING TO PUPILS ON ROLL

Pupil Roll Category	No. of Schools	Category Mean	Weight
0 - 99	47	50.6	1
100 - 199	32	149.7	3.0
200 - 299	17	242.8	4.0
300 - 399	14	345.1	6.8
400 & Over	9	475.2	9.4
TOTAL	199		

The values for the weighted replies are shown in Table 5/6, and it may

TABLE 5/6 REPLIES OF 114 HEAD TEACHERS TO QUESTION 3 WEIGHTED FOR PUPIL ROLL SIZE

Pupil Roll		CATERED FOR								
		Intellectually			Socially			Physically		
	Weight	Yes	No	No Rep.	Yes	No	No Rep.	Yes	No	No Rep.
0 - 99	1	37.0	5.0	55.0	38.0	5.0	4.0	34.0	9.0	4.0
100 - 199	3.0	78.0	15.0	3.0	93.0	-	3.0	90.0	3.0	3.0
200 - 299	4.0	60.0	8.0	-	64.0	4.0	-	60.0	8.0	-
300 - 399	6.8	68.0	20.4	6.8	68.0	13.6	13.6	54.4	20.4	20.4
400 & Over	9.4	56.4	18.8	9.4	75.2	-	-	65.8	9.4	-
Total Weighted Replies		299.4	67.2	24.2	338.2	22.6	20.6	304.2	49.8	27.4
Weighted Replies %		76.7	17.0	6.3	88.7	5.9	5.4	79.8	13.0	7.2
		100%			100%			100%		

be seen that there is no change in the pattern, the great majority of the responses being in the affirmative for the three aspects of Question 3. The weighted replies have been percentaged and they are compared with the percentage distributions of the raw responses in Table 5/7. Remarkably little difference in the two distributions is shown here indicating a homogeneity in the patterns of the head teachers' replies whether they are in charge of a school with a large, medium-sized or small pupil roll.

TABLE 5/7 COMPARISON OF PERCENTAGE DISTRIBUTIONS OF RAW REPLIES TO QUESTION 3 BY 114 HEAD TEACHERS WITH PERCENTAGE DISTRIBUTIONS OF REPLIES WEIGHTED FOR SIZE OF PUPIL ROLL

	CATERED FOR								
	Intellectually			Socially			Physically		
Raw Replies	Yes	No	No Rep.	Yes	No	No Rep.	Yes	No	No Rep.
	79.0	14.3	6.7	86.6	6.7	6.7	79.0	13.5	7.5
		100%			100%			100%	
Weighted Replies	77.7	17.4	4.9	88.5	6.2	5.3	79.8	13.0	7.2
		100%			100%			100%	

Question 4: Do you consider the "top 1% - 2%" children have any special needs as is the case with the low ability children at the other end of the scale? ..... YES/NO
General Comments: .....

The great majority, 90%, of the head teachers, replied in the affirmative to this question. The responses were:-

YES	106	..... 89.0
NO	2	..... 1.8
No Reply	11	..... 9.2
Total	119	100%

Two negative replies were given one each from a school with a pupil roll of 0 - 99 and 200 - 299.

It is difficult to analyse the unstructured material supplied under 'General Comments'. An attempt has been made to categorise it in Table 5/8

TABLE 5/8 SUPPLEMENTARY REMARKS IN REPLY TO QUESTION 4.

A. Children's Needs:	School Roll 0-99	100-199	200-299	300-399	400 & Over	Total Remarks
1. As many as with children of low ability.	3	-	2	3	2	10
2. More advanced creative and intellectual work to stimulate and stretch, programmes specially as for less able.	6	5	3	1	1	16
3. Special efforts for them to develop at their own rate, realise their potential and avoid frustration.	6	4	2	2	2	16
4. Opportunities for leadership.	-	-	-	-	1	1
5. Intellectual environment, similar peers and in-depth work.	3	-	-	4	-	7
6. An intelligent teacher.	1	-	-	1	-	2
7. Opportunity for social development as emotional stages may be missed in an intellectual environment - encouragement as temperamental like low ability pupils.	1	3	1	2	-	7
8. No special social needs.	-	1	-	-	-	1
9. Less dependent on teacher - self-motivating so can work in library.	1	-	2	-	-	2
10. More equipment and/or books.	1	2	-	-	-	3
11. None - classes under 30 and good teachers enough.	2	1	2	4	-	9
B. Children themselves should:						
1. Accept and adjust to their special abilities.	2	-	-	-	-	2
C. Current Classroom Situation:						
1. Taught partly in own group - sometimes with visiting teacher.	1	2	-	1	-	4
2. In large classes virtually impossible to give attention needed.	-	-	-	1	-	1
3. If dissatisfied through under-achievement can be disciplinary problem.	2	-	-	-	-	2
4. Have social problems with envious peer group.	1	-	-	1	-	2
5. Lack competition in small school.	2	-	-	-	-	2
6. All work at own rate in wide ability range classes.	5	3	1	-	-	9
7. Some resentment of teachers for their intellectual matches.	1	-	-	-	-	1

and to order it under headings in an approximate continuum. It may be seen that the great majority of the head teachers believe such children have a need for more advanced intellectual work, planned on an individual basis but that consideration should also be given to the pupils' emotional and social development. Only one head comments that pupils in the top 1% - 2% of intellectual ability should be given opportunities for leadership.

Question 5: If you consider the "top 1% - 2%" children have no special needs, can you give your reasons?

Only seven entries have been made in response to this question - two of which state 'None' and two heads have misread the question. Only three head teachers, two of small schools and one with a pupil roll of 200-299 have given an answer to this enquiry, the reasons given being that:-

(a) physical and emotional development may not keep pace with that of the intellect,

(b) all the children are members of the school family, although extra responsibility might be given to such children in helping the others, at dinner table, etc.

(c) it is important for clever children to mix with all ability groups as it is for the less able pupils to do so.

Accordingly it may be seen that there is no contradiction between the patterns of the head teachers' responses to Questions 4 and 5.

Question 6: If you consider the "top 1% - 2%" children do have special needs, can you give your reasons.

Here 88 (75%) of the head teachers have responded, many of them fully. An attempt has been made to order this unstructured material into a continuum of classified reasons in Table 5/9. A number of the heads have dealt with several aspects of the children's needs, in which case their comments have been compounded into more than one of the 114 statements listed.

The need for 'stretching' the intellectual child or recognition of such pupils' speed of learning and their need for practice in academic skills, accounts for one-third of the reasons enumerated for special provisions to be made for them. The opposing view that such pupils have no special needs is expressed in 7% of the responses. A minority view of 10% is concerned with emotional and related problems and the possibility that they may lead to maladjustment. Another 7% each refer to dangers that such children may hide their talents and show behavioural difficulties. Where classes are large, the teacher's difficulties in giving adequate attention to the two extremes of ability is mentioned in 6% of the answers. The pattern of the replies varies little with the size of the pupil roll - with the possible exception of references to personality difficulties.

The reasons for special consideration to be given to highly intellectual children in answers to Question 6 overlap considerably with the added comments in Question 4 and general remarks given in the last section. In order to present the material as clearly as possible, the viewpoints have been tabulated here under whichever heading number the teachers have made their remarks on the questionnaire form.

TABLE 5/9 REASONS GIVEN BY 88 HEAD TEACHERS IN ANSWER TO QUESTION 6

REASONS	PUPILS ON ROLL					Total No. of Reasons
	0-99 Mean 50	100-199 Mean 148	200-299 Mean 243	300-399 Mean 393	400 & Over Mean 472	
1. The future leaders - need stretching for their own and society's benefit.	-	1	1	1	-	3
2. Need individual attention low ability groups.	2	1	-	1	-	4
3. Learn quickly yet need an intellectual environment and practice with such skills.	6	6	2	2	3	19

cont'd. over.....

TABLE 5/9 contd.

REASONS	PUPILS ON ROLL					Total No. of Reasons
	0–99 Mean 50	100–199 Mean 148	200–299 Mean 243	300–300 Mean 393	400 & Over Mean 472	
4. To be stretched and to work with tasks difficult enough to avoid bordeom. May not be enough competition in a small school.	11	11	4	–	1	27
5. Difficult for class teacher with extremes in classes of 30, 40 or more so such pupils may be neglected.	1	2	2	1	1	7
6. If not catered for may become mentally lazy or hide talents to avoid isolation and so not be recognised.	2	2	1	2	1	8
7. Bored if work set at same level as age group – behavioural problems if stimulation lacking.	3	2	2	–	1	8
8. Personality type varies – temperamental, nervous disposition, dissatisfaction, communication difficulties – may lead to maladjustment.	5	4	–	2	–	11
9. Social adjustment problems if no suitable equal companions – may become isolates.	–	3	–	–	–	3
10. Teacher more emotionally involved with less able to whom more attention given.	–	1	–	–	–	1
11. Need a quiet place to work away from integrated children.	1	–	–	–	–	1
12. Given extra music tuition, books to find things out. Good at craft, sport, etc.	1	1	–	1	–	3
13. Experienced teachers can reach their wave-length.	1	–	1	1	–	3
14. Need closer parent-teacher relationship outside school.	–	1	–	–	–	1
15. Should not be segregated – social group work so that they appreciate others' difficulties.	1	3	–	–	–	4
16. May be 'cocky' annoying others – or feel inferior as less capable with hands.	–	1	–	–	–	1
17. No special needs – all should be challenged – any school should be able to cater for intellectual needs.	3	2	–	2	1	8
TOTAL	37	41	13	13	8	114

Question 7: Any other general comments you may wish to make

The wide ranging and conflicting remarks made by the head teachers are summarised under five headings as follows:-

(a) Characteristics of gifted children,
(b) Existing classroom and school environment, or that thought to be desirable for gifted children,
(c) Teacher approach and teaching method currently practised or suggested as a future development,
(d) Research requirements,
(e) Relationship of society and gifted children.

(a) Characteristics of the gifted child:

The majority of the head teachers responded with one or more of the following remarks. Gifted children may appear average or below average and under-achieve deliberately to win acceptance by their peers. They may be unco-operative from frustration and be labelled 'slow' or 'switch-off' and appear silly. Boredom with their peers, teachers and the material is their worst enemy. They are often tolerant of the teacher's deficiencies in not demanding enough work from them. It is difficult to recognise gifted children and they may have to conform to the average particularly in an infant school.

Several heads stated that a child of high intellectual capacity tends to be lonely and may have social and communication problems resulting in isolation and neuroticism. A bright 9 year old may talk like an adult but needs to be integrated into the school class. Another head believed the majority of 'high-fliers' adjust well to non-academic aspects of school life. Other remarks pointed out that much depends on the size of the school and the individual character of the child, some pupils earning the respect and some the jealousy of their peers. One bright child promoted to a higher class might be able to cope with the social problems involved

but a second child not succeed in doing so. One head remarked that in spite of the efforts of teachers to assist less able children they would never reach a high standard.

Contradictory views were expressed with regards to physical ability, one head commenting that 'top' children usually do well in football, etc., while another stated it was rare to find academic aptitude and physical ability in one pupil; a third head said they had less practical ability.

About one-quarter of the children were said to be in the IQ group 135-140 in a school in a largely affluent area.

(b) Existing classroom and school environment, or that thought to be desirable for gifted children.

Several heads stated that when staff and accommodation were available the bright pupils were given attention in their own group, that they needed carefully selected teachers lest they suffer, or that class teaching might be detrimental to clever children should they be intellectually isolated among average peers.

A number of heads expressed the views that in small child-centred schools each pupil could receive individual attention, have an opportunity to work near to capacity and mix with older pupils without being different as classes had an age range of five years - but that they might benefit from more competition. Such conclusions were drawn partly from experience with backward children. In larger schools the open-plan technique, or working in small groups was said to provide for the use of individual courses based on a child's learning style. Other comments were that increased staffing, building and equipment would allow provision to be made for gifted children in a normal school situation and that ability

to find a child suitably inspiring work rests with the environment of the school as well as with the teaching staff and methods practised. The head of one large school stated that the clever children could forge ahead as books were available designed for the twelve plus age group. Another view was that gifted children needed a free environment in which all levels of ability could find mental and social stimulation and the companionship of 'all-ability' groups, providing they had stimulating teaching; another head said that 'top' pupils benefit from contact with those able in music, art or P.E.

The problems facing teachers as regards recognition and of appropriate action is shown in the comments of two heads. One that children ahead in reading, perception and logical reasoning might be so because of their home background and the attentions of an experienced teacher or because of their intellectual ability; the second that one child put forward two terms might work well but another be unhappy because of the jealousy of his peers.

Two other remarks on different topics were that if there is little play-space physical development is difficult and that the school was bottom-heavy with infants through the sudden growth of the village.

(c) Teacher approach and teaching method currently practised or suggested as a future development.

The view was expressed that gifted children need special techniques, stimulating apparatus and surroundings, and understanding. Schemes involving Colleges of Education and the part-time withdrawal of gifted children from schools for teaching, it was thought, might be

investigated. In recent years, it was held by one head, the emphasis in the Training Colleges had been on special education for the retarded with little attention to the highly intelligent, while another commented that logically we should make adequate provision for all ranges of ability and the 'top' children probably needed more advanced work. One head said the teacher must act as a whetting-stone as gifted children would not obtain this type of help from their peers, and a second that it was easier to provide help for the bottom 2%, but a conscious effort was needed to give a fair share of time to the clever children. In one favourably-situated school it was stated staff had had to make special efforts to obtain success - failures could have been far more calamitious than with ESN children. Another head believed that there was waste of valuable learning time when 'top' children did not have an opportunity to develop if much of the teacher's time was spent on the backward. It was remarked that specialist high I.Q. teachers were needed as currently many gifted children moved outside the state system. Peripatetic help was suggested as a possibility although it gave less opportunity for a stimulating environment and educational visits. If a special post were created similar to that of a remedial teacher stimulus could be given after school hours. It was felt that in some schools the needs of the gifted might have been neglected and it was important for them to be stretched and challenged.

Some heads tended to adopt other views - that all children could be catered for so that they progress as speedily as possible at their own level but they must not become precocious and blasé.

If the work was individually programmed this could be achieved - but that an extra teacher, classroom and facilities would assist to this end. It was said, too, that periodic 'sessions' could help in the latter stages of education but special catering for such a small group at all times would be impossible. One head held that all children were different and clever children should have an opportunity to develop to the fullest their abilities being 'pushed' to greater standards than pupils of average ability. A second cautious head remarked that the 'top' children should be 'stretched' but not 'pushed' as there is often too much of this at home. Another respondent believed that the great drawback of mixed ability classes was that the teacher had to choose between using a simple vocabulary for the less able or one more advanced and concise to suit the above-average children. The gifted pupils often need encouragement to experiment was the remark of a different head.

Comments of heads regarding the social development of an intellectual child were that he must be watched as he might become an isolate in a mixed ability class yet to separate completely bright children and their specialist teacher would be anti-social and devisive. Another reply in agreement said intellectually-advanced children might have a low social age and should not be isolated from the average child. One head commented that they should not be withdrawn as it was damaging for either gifted or remedial pupils to be segregated but that the 'top' pupils needed more social education than the 'bottom' as the former often have problems with relationships.

(d) Research Requirements:

Here only four heads commented, two of whom felt research was required to assist in the recognition and early diagnosis of gifted children. An opposite view suggested that research results often caused ignorant laymen (i.e. parents) to bring pressure which is educationally unsound. One head felt that the criteria for determining the 'top 1%-2%' on the questionnaire were inadequate. Several heads extended an invitation to the investigator to visit their schools so that their views could be more fully expressed and additional information supplied.

(e) Relationship of Society and Gifted Children:

The opinion was expressed by three heads that society's future leaders will come from top ability children and that they should accordingly be given every possible assistance. A fourth head pointed out that, as all children will be bound by society and its conventions, if gifted children are segregated from average children they will find it difficult to associate with them as adults.

The opinions expressed by the heads show that they believe gifted children to be difficult to recognise as they may under-achieve deliberately to win acceptance by their peers to avoid encountering social problems. There is general agreement that gifted children should be enabled to progress at a pace commensurate with their ability and that they can be adequately catered for in the schools although additional provisions for this purpose are desirable. The heads are almost unanimous in their view that gifted children should not be wholly segregated from other pupils but they are divided in their opinions as

to whether they should be taught in special groups for part of the time. The views expressed under Question 7 are in accord with responses given to the earlier questions and supply a framework within which the categorical replies may be interpreted.

INTERVIEWS

The replies of the random 10% sample of the Head Teachers interviewed for the completion of the questionnaire are shown in Table 5/10. The

TABLE 5/10 INTERVIEWS: REPLIES OF HEAD TEACHERS TO QUESTIONNAIRE

	No. of Schools with Pupil Roll: 0-99	100-199	200-299	300-399	400 & Over	Total Schools
Question 1	6 40%	4 26.7%	1 6.7%	1 6.7%	3 20%	15 100%
Status:	No. of Cty. Prim.		Vol. Cont.		Vol. Aid.	
	11 73.3%		1 6.7%		3 20%	15 100%
Question 2	Yes	No				
	12 80%	3 20%				15 100%
Question 3(a)	Yes	No				
	10 66%	5 34%				15 100%
3(b)	14 93%	1 7%				15 100%
3(c)	12 80%	3 20%				15 100%
Question 4	Yes	No				
	15 100%	- -				15 100%

Remarks:		Total % Remarks
a. Like low ability may become a social problem.	1	6.7
b. Need individual attention as the backward.	2	13.3
c. Must be stimulated by experienced teachers.	4	26.7
d. Need competition from their equals.	1	6.7
e. Taught part of time as a group on their own.	2	13.3
f. Slow adequately catered for but not the very bright.	1	6.7
g. Can be disciplinary problems.	1	6.7
h. All have individual attention.	3	20
Total:	15	100.2

		Total	% Remarks
Question 5	a. No special needs as catered for in family grouping - given extra responsibility.	1	6.7
	b. No intellectual needs because of immaturity and home background.	1	6.7
	c. No comment.	13	86.7
	Total:	15	100.1
Question 6	a. Need to be stretched for own and society's benefit.	1	6.7
	b. Differ markedly from other children.	1	6.7
	c. Can be catered for in small school but need more attention in a large one.	1	6.7
	d. Lack competition in small schools.	2	13.3
	e. Can become isolates.	1	6.7
	f. Naughty and bored if not fully stretched.	5	33.3
	g. Teacher more involved with backward so bright tend to be left to free-wheel.	1	6.7
	h. Closer parent/teacher relationship and more out of school activities needed.	1	6.7
	i. Talents such as music, singing and games catered for but no special provision for very able.	1	6.7
	j. No comment.	1	6.7
	Total:	15	100.2
Question 7	a. Given some teaching separately in own group.	2	13.3
	b. Additional teacher and classroom facilities needed.	2	13.3
	c. In small child-centred school each child catered for but may be some neglect of gifted elsewhere.	2	13.3
	d. A great need for highly-intelligent to be fully stretched.	1	6.7
	e. Society's future leaders will come from top ability children.	1	6.7
	f. Training Colleges give too much emphasis on backward and little on highly-intelligent.	1	6.7
	g. In terms of attainment those of low ability respond less to teacher's efforts.	1	6.7
	h. Tend to be lonely.	1	6.7
	i. Books for 12+ age-group so top children may forge ahead - peers may be jealous if promoted.	1	6.7
	j. Social development differs so one child may be promoted but not another.	1	6.7
	k. School has a disproportionate number of infants.	1	6.7
	l. No comment.	1	6.7
	Total:	15	100.2

proportion of small schools among the main body of the respondents as well as those in the sample is approximately 40% but sampling variation has resulted in the inclusion in the latter of a larger percentage of schools with a pupil roll of 400 and over. As regards status, the questionnaires completed as an interview include the same proportion of County Primary Schools, but relatively more voluntary aided schools than do the main body of the forms. However, the composition of the 10% sample schools visited may be said to approximate that of the 78% of the total population of schools in the Local Education Authority area concerned which completed the questionnaire.

The only marked difference between the pattern of replies among the interviewees and those returning the postal forms is that of Question 2, 80% of the head teachers interviewed as compared with 49.5% of the postal responses replying 'Yes'.[1*] In answer to Question 3, there is variation in the percentage for affirmative replies for sections (a) and (b) between the sample and the main population but this may be accounted for by sampling variation. The same may be said of the responses to the first part of Question (4) where the affirmative replies total 100% in the sample and 90% in the main body of the responses, the general tenor of the remarks made in the second part of the question also being in agreement. In both groups of answers the great majority of the Head Teachers make no reply to Question 5, while although fuller and more varied, the tenor of the 114 remarks made by the schools in answer to Question 6 and of the general comments in response to Question 7, are in both cases approximately in line with those made by the Head Teachers interviewed.

1* May be partly accounted for proportionately more large schools in 10% sample.

Since completed questionnaires were obtained from all the schools in the 10% sample, it seems likely that the 78% of the responses from the total population of 134 schools circulated might be expected to be representative of the Head Teachers' expressed opinions in the Local Education Authority area concerned.

CHAPTER 6

DISCUSSION AND CONCLUSIONS

This study has examined 73 gifted pupils to find whether 'under-achievement' appears to be occurring and to ascertain the children's general characteristics in the school setting. The problems associated with the discovery of pupils within the top 1% - 2% of intellectual ability has meant that a random sample of such children has not been obtained. Before proceeding to the main topic of under-achievement the identification and classification of gifted children will be discussed as this impinges upon the interpretation of the results obtained.

1) IDENTIFICATION OF GIFTED CHILDREN

Whereas physically handicapped and many of the mentally backward children are usually easily recognisable, the discovery of intellectually gifted children present special difficulties since their unusual qualities may not be reflected in their scholastic performance. It is suggested here that gifted children may be classified as those who:-

1) have abnormally high attainment records in scholastic work and are easily recognisable - the successful,

2) present disciplinary problems in school and/or are otherwise maladjusted - identified when tested at Child Guidance Clinics, and

3) pupils appearing to be merely bright or even average as their scholastic performance does not indicate them to have exceptional intellectual talent. These children will be designated the 'covertly gifted'.

Although not previously formulated as above, the existence of exceptionally intellectually able children in each of these three

categories has received past recognition in various contexts. The high-achieving gifted child has been awarded scholarships and other prizes. Regarding the second category, a special study was made by Pringle (1970) of clever problem children. She reports ('Able Misfits', 1970, p.75) that between one quarter to a half of the pupils studied obtained scholastic attainment test scores which were one or two years below their actual age. The Plowden Report too (1967) draws attention to the existence of problem able children on p.306, stating:

> 'One must not restrict the search for the highly-gifted to children who are doing well in school to the 'good'; one must look at the 'difficult' one as well.'

Turning to the third category named above, the covertly gifted children, one finds it is for the very reason of their covertness that they are frequently unrecognised and hence information about them is scanty. Nevertheless, there is research evidence that such pupils exist. An American study by Pegnato & Birch (1959) involving 1,400 Junior High School children found that their teachers nominated only 45.1% of the children who subsequently obtained a Stanford-Binet Intelligence Quotient of 136 or above. 92.3% of such children were identified on a Group I.Q. test with a cut-off point of 115 and by the use of other methods such as Achievement Tests and the school records. Similarly, the Ohio study (Barbe, 1964) of 65 highly-intellectual children (I.Q. base 148 on the Stanford-Binet) reported that 25% of the group were not included by their teachers as being the most intelligent children. In this country, the Oxford study (1967) of 64 secondary 'High I.Q.' pupils identified the children with the aid of 11-plus selection data. The report quotes from the comments of the secondary schools involved such remarks as:-

> "The pupils chosen have not so far shown themselves as able as several others in their year", and
>
> "These are not the most intelligent ones in their respective classes".

The present findings are in line with the foregoing. Twelve of the seventy-three gifted pupils were nominated by their teachers as control children of average ability to be paired with the gifted pupils in the same school classes. As the teachers nominated only 37 of the present group, (the remainder being named by their parents or educational psychologists), the twelve unrecognised as gifted represents a third. This unidentified proportion is larger than the 25% found in the Ohio study.

Over-estimation on the part of the schools of the ability of normal-bright children has been found too. Pegnato & Birch (1959) state that almost a third (31.4%) of the children chosen by their teachers as 'gifted' were in the average range of intelligence according to the Stanford-Binet test and obtained an I.Q. score of less than 136. In this country Tempest (1971) reports that of 72 seven-year-olds nominated by their teachers as 'gifted', 39 scored below 127 on the W.I.S.C. when tested individually, and of these seven scored below 110. In the present study, sixteen failed to score an I.Q. of 140 on the Stanford-Binet from among the fifty-three nominated as 'gifted' by their teachers, representing 30.1%. The percentages found in the American and the current project are unexpectedly close.

In recent years the existence of covert highly-intellectual children, although not so named, has been acknowledged in this country by teachers and others. Ogilvie (1973, p.42) comments that about half of the teachers agreed that many 'gifted' children are probably unidentified in the schools. A few lines further on he states:-

> " ..... in the professional opinion of most teachers there is a risk that intellectual giftedness will remain unrecognised unless great care is taken".

Similarly, Proctor, (1966), said when discussing very able children,

> "Their needs are as important as those of backward children but may be overlooked because they are less obvious".

Lord Beeching, when Parliamentary Under-Secretary of State at the Department of Education and Science, has been reported by the 'New Scientist' (28.12.1972) as admitting that:-

> "There is no doubt that some gifted children are missed in the schools at both the primary and the secondary levels".

Where there is failure to recognise an intellectually 'gifted' child, it follows that there will also be a lack of appreciation of the high achievement levels which such a pupil might attain.

2) The Gifted Sample in the Present and Other Studies

The present study had as its original aim the discovery of fifty pupils in Local Authority primary schools able to score above 140 on the Stanford-Binet Intelligence Scale in order to study certain of their features; in the event seventy-three were found. No exhaustive search for these children in the top 2% of the intelligence continuum in the participating schools was undertaken.

Half the children in the 'gifted' sample were nominated by their teachers and it seems likely that the majority of their nominees were children in the first category of 'gifted' pupils listed the 'successful', since the most usual criterion upon which teachers grade their pupils is the manner in which they perform their school-work. The minority of maladjusted children, who fall into the second category, have usually attended a Child Guidance Clinic where close examination has revealed their potential ability and the children's test scores will in turn have been reported to their schools. It may be deduced that it will be the third group, the covert 'gifted'children, who are unnamed by their teachers as their scholastic standards are about the class average.

It follows that the majority of the covert 'gifted' children are likely to have a lower mean attainment level with their school-work so that their inclusion into a group of highly-intellectual children under study would reduce the mean level of attainment. A corollary is that whatever degree of under-achievement may be found to be present among a group of 'gifted' children will understate the true position unless all the covertly 'gifted' have been included.

In the present study the twelve ex-control children are considered to have been covert 'gifted' pupils. Taking as the criterion of under-achievement a gap of two years or more between mean educational attainment and mental age, there appears to have been under-achievement on the part of the twelve children concerned. The teachers' rated the classroom standards of work of the covert 'gifted' children as follows:-

10 pupils up to one year above the class average and

2 " about the class average

whereas the gap between the mean mental and chronological ages of these twelve children was 4yrs. 5m., their mean I.Q. being 150.

Secondly it follows that the standards of classroom performance of the thirty-seven[1*] pupils identified by the teachers was above that of the covert 'gifted' children since the teachers rated these thirty-seven:-

11 - one year or over above the class average,

25 - up to one year " " " "

1 - about the class average.

It may be deduced that the inclusion of the twelve brings down the mean level of the classroom attainment rating of the full seventy-three children in the sample (the remaining twenty-four took an intermediate

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1* Seventy-three less the twelve covert and twenty-four parent and psychologist nominated 'gifted' children.

position. It seems probable too that the degree of under-achievement found by other researchers may also have understated its true extent where teacher nomination has played an important part in the selection of the children studied.

Attempts have rarely been made to identify all the highly-intellectual children on a given criterion except as part of a general survey of the child population in a particular geographical area such as those made by Burt in 1917, Wiseman (1951 and 1957), Pidgeon (NFER, 1955), Wright (1963 and Yule et al. (1973). Among the foregoing only Burt appears to have followed-up the 'super-normal' children identified in his London Surveys (Yr.Bk. of Ed. 1962, p.24-25).

The National Children's Bureau has undertaken a longitudinal study of 17,000 children being the total number born during one week in England, Scotland and Wales. The follow-up of specifically able children was undertaken by Hitchfield (1973) whose objective was not to obtain a randomised sample of talented pupils since she adjusted the composition of her selection according to the social class background of the children (ibid. p.8). Nor was the selection of her sample from the 1958 Cohort limited to children of high intellectual ability but included those talented in physical skills such as swimming (ibid.p.79). The group of 238 pupils chosen for study was drawn from 500 names selected on the basis of a 'Draw-a-Man' test performed at the age of seven years and subsequent teacher and/or parent nomination when the children were eleven years old. In spite of the impartiality of the total population the methods by which the choices were made was likely to have led to bias in the sample drawn. On the basis of the findings referred to above, it is unlikely that the teachers would have recognised all the covertly gifted children while the comprehensiveness of the parental nominations

made as a result of a letter "published in several magazines and the national press" was questionable (ibid.p.8). Of the 238 selected it is stated (ibid.p.200) that 48% scored an I.Q. over two standard deviations from the mean. From this value it may be calculated that only 114 children obtained an I.Q. of over 130, that is about one-third of the number who might have been expected to occur in a population of 15,640 children[1*] among whom intelligence was normally distributed.

Other British studies of 'gifted' children by Lovell & Shields (1966) and Tempest (1974) did not have the objective of identifying as many intellectually talented pupils as possible, or of obtaining a randomised sample, in a given school population.

The most widely recognised work on gifted children is the classic study made by Terman (1925). However, in spite of over 600 children being identified with a Stanford-Binet I.Q. of 140 or over, the purpose of the project was not to identify all the children in the relevant school population who might have obtained such an I.Q. but to make the study "as representative as possible of all gifted children in the territory covered". (ibid. p.20 Vol.I). The initial selection was by subjective teacher ratings as well as by age, the youngest child in a class being selected. Accidental discoveries of additional pupils having an I.Q. of 140 or over led to a scrutiny of all children in seven schools leading to the discovery of three additional pupils, representing 25% of the

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1* 1958 Cohort - original population 17,000, of whom 92% were said to have survived at aged seven years - that is, 15,640 children. If an I.Q. score of over two standard deviations from the mean is taken as the criterion of intellectual giftedness, among a population of 15,640, the number of intellectually gifted children might be expected to be 313,000. On this calculation 31.9% of the intellectually gifted children in the population were included among the sample of 238 pupils studied.

nominations there, who would have been missed by the other methods of search. Terman went so far as to state:-

> ".... if one would identify the brightest child in a class of 30 - 50 pupils it is better to consult the birth records in the class register than to ask the teacher's opinion. (ibid. p.33).

He continued, commenting that this finding had high reliability as it was based on the nominations made by approximately 6,000 teachers. It does, of course, refer only to the situation in the Californian schools in the 1920s.

Two other American studies regarding 'gifted' children already mentioned (Pegnato & Birch, 1959; Barbe, 1964), seem likely to have discovered a very high proportion of the pupils of superior intelligence in the school populations reviewed, the one as a result of the comprehensive test procedures adopted and the other through the efforts of thirty-five school Psychology Interns.

No recent British attempt to obtain as nearly as possible a random sample of all the 'gifted' pupils in a given school population in order to study their characteristics is known to the investigator. The majority of studies, including the present one, have sought merely to discover a sample of 'gifted' children, relying in some degree upon teacher nomination and in so doing have obtained a biased sample since the covert 'gifted' children have been under-represented. The three American studies referred to above and the mis-nomination of the twelve ex-control children in the current work suggest that at least a quarter or a third of highly intellectual children are probably in the covert category. Considerations of the results of the present study given below must be made against the background of this bias inherent in the sample.

3) Relationship Between Mental and Educational Ages [1*]

The correlations between English Educational Age and Mental Age are lower for the Gifted Main and Sub-Groups than for the corresponding Control Groups, a result which was to be expected as the scores of the Gifted children were at the extreme ends of the distributions of both measured ability and attainment.

A surprising outcome was found for Mathematics where the pattern is reversed and 'r' was 0.908 for the Gifted Main Group, higher still at 0.913 for the High I.Q. Sub-Group which included pupils having an I.Q. of 160 - 213, even though considerable extrapolation of the NFER tests was necessary. There was a decrease in 'r' to 0.854 for the Control Main and to 0.821 for the Low I.Q. Sub-Group.

The statistics are imperfect but if the values obtained do have validity they appear to be indicating that the correlation between Mental Age and Mathematical Educational Age is higher for the Gifted than for the Control children. This phenomenon may be the result partly of overlap between the tests used; the Mathematical Attainment Tests are largely concerned with testing the degree to which the basic concepts have been grasped, whereas the Intelligence Tests seeks among other things to measure the ability to recognise relationships. If such facility is possessed by an individual to a high degree, it might be expected that such mental attributes would also be applied to the manipulation of mathematical concepts and the high correlation may be due to the two tests measuring similar properties.

1* Additional statistical note in Appendix D.

Should the latter conclusion be correct it gives rise to a further question: to what degree is the high attainment in mathematics the product of the exceptional intellectual capacity of the children concerned and their ability to learn from their environment and to what extent is it the product of the conscious teaching and stimulation given by the schools.

4) Achievement Dividends - Mean Standardised Scores : Mean I.Q.

The mean Achievement Ratios for Reading, English and Mathematics give Dividends ranging from 74.4 to 92.9 for the two sample Groups (Table B/22). Since the NFER Attainment Tests and the Revised Terman-Merrill Intelligence Scale utilised standardised scores with a mean of 100 and have similar standard deviations, it might have been expected that the mean of the Dividends derived from the two measurements would be distributed around 100 for both sample Groups. A partial explanation of the shortfall found may be differences in the school population upon which the two tests were standardised and the effect of regression. There is more reason to expect an approximate co-incidence between the theoretical and obtained Achievement Dividends for the Control children since their mean I.Q. was 116 so that the regression effect is less with this Group.

It would probably be incorrect to attribute all the differences between the theoretical and observed Achievement Dividends of 21.6 and 15.3 for the Gifted Groups and 15.5 and 3.1 for the Control Group to the fore-going statistical considerations. The gap between the theoretical and obtained Dividend for the Gifted Group extends upwards from the upper limit for the Control Group so it appears there may have been relative under-achievement by the Gifted as compared with the Control Group.

5) Attainment Test Performances

The Attainment Test performances of the two sample Groups, relative to their measured ability have been compared for Reading, English and Mathematics.

i. Reading: Three out of four of the comparisons made for the younger infants show the Gifted children to have had a higher Reading Age, even relative to their measured potential than the Control infants. The gap is not large but the regression effect might have been expected to bring the Gifted infants' Reading Age below that of their Mental Age. Possible explanations of this anomaly are that in spite of the high I.Q. scores gained (160-213) these under-stated the infants' true potential and/or that although the children were paired for socio-economic background the number of Gifted infants drawn from families in the higher occupational categories was proportionately greater for the Gifted as compared with the Control children (see Figure 1/7), and that these differences in family background may have led to the infants' advanced performances.

ii. English: A reversal is seen in the relative achievement positions of the Gifted and Control children when the results of twenty comparisons for English language are examined, in which the corresponding level of attainment of the Gifted Group is found to be below that of the Control Group, the gaps being sufficient to be of statistical significance in fourteen cases. The finding here is that in comparison with the Control Group there appears to be under-achievement in English language by the Gifted Group relative to their measured ability.

If the explanations put forward above for the advanced Reading Ages of the Gifted children are accepted then the same considerations of

under-estimation of potential and preferential family background should be taken into consideration here too, in which case the reversal in the trend of levels of relative attainment may be greater than depicted by the calculated values. A suggested reason for the apparent relative decline in performance is that teacher expectations for the Gifted children have not been high enough during the greater part of the time spent in the primary school so that there has been a gradual widening of the gap between the level indicated by their mental age and that shown by their attainment test scores. The results found here are in line with conclusions on the 'Brentwood Experiment' (Bridges, 1969, p.24).

> "Our finding has been that under-achievement can occur where a bright child has powers much in excess of what he is called on to use in school; such a child may be first in his class and still, from the viewpoint of his intellectual gifts, be under-achieving".

A proportion of the fourth-year Gifted juniors were facing entrance and scholarship examinations into Direct-Grant or Public schools which may account for the partial recovery in the comparative attainment level among this set of Gifted pupils.

iii. Mathematics: Fourteen of the twenty comparisons made for Mathematics showed the Gifted children to have a lower relative level of achievement, the difference in six cases being sufficient to be of statistical significance. In particular the younger infants displayed a markedly lower level of relative achievement in Mathematics than did the Control children, the gap being largest between the High and Low I.Q. Sub-Groups. It is possible that the explanation of this finding is that the highly intellectual children encompassing a greater degree of mental development found the experience of entering school more traumatic than their 'nearer-to-the-average' peers and that resultant learning difficulties

impeded their early progress. The contrast of the Gifted infants' performance in Mathematics with that previously noted in Reading might be the result of reading skills often being acquired in the pre-school environment but such learning of mathematical concepts occurring more rarely.

The position is reversed for the third and fourth-year juniors where the mean Attainment Quotient and Indices are relatively higher for the Gifted children. In the case of Basic Maths 'C' designed for third-year juniors, the Gifted Group obtained Achievement Quotients and Indices relatively higher than did the Control Group.

Since the performance level of the Control Group has been adopted here as a base line for consideration as to whether or not under-achievement is occurring among the Gifted Group, the results show such under-achievement is absent. However, the validity of the criterion adopted is questionnable in this case since the performance level of the Control children on Basic Maths. 'C' is 2yrs. 9m. and 1yr. 2m. below their mental and chronological ages respectively. Turning to the attainment levels of the fourth-year juniors on Maths. 'DE', the narrowness of the gap between the relative performances of the Gifted and Control Groups by comparison with the separation found between the two Groups of infants might be partially accounted for by increased motivation as a number of the pupils were preparing for entrance examinations into selective schools and/or sampling variation.

Mathematical ages of 16yrs., 17yrs., etc. gained by Gifted juniors may have shown 'over-learning' since the curriculum content from which the values have been derived was not that of secondary school level. When such material was presented to a few of the fourth-year juniors they were able to score only a few points as they had not learnt the

academic material covered. Since it is unusual for Mathematics at an intermediate level to be introduced into junior schools it seems unlikely that the high levels of performance on the N.F.E.R. tests were reflecting more advanced learning although the scores may have signified greater thoroughness in mastering the basic material which was covered. Some of the third and fourth year Gifted and Control juniors obtained Mathematics test scores in line with their mental ages but a concealed form of 'under-achievement' may nevertheless have been present among the Gifted pupils since their Mathematical ages were much higher than those of the Control children and as their scores were not based upon secondary school curriculums but only upon extrapolated scores on the N.F.E.R. fourth-year junior Attainment Tests.

6) Comparison of Teacher, Parent and Ex-Teacher Control Nominated Children.

No pattern of differences in the mean Achievement Quotients and Indices obtained by the three Sub-Groups of the Gifted sample classified according to their form of nomination has been found.

It was expected that the teacher and parent nominated Gifted children would obtain higher mean attainment values than the Ex-Control pupils but the results were variable. It has been seen that the teachers have nominated children as Gifted at least partly upon the basis of classroom attainment (see p. 97) and it was assumed that parents who brought forward their children as 'gifted' might be specifically interested in education and likely to have provided extra encouragement and/or assistance with their children's school-work.

There were lower attainment values for the Ex-Control children obtained generally for Reading and English language but not Mathematics

compared with the remainder of the Gifted Group but it might be that these twelve covert Gifted pupils on the occasion of participating in a research study were motivated to complete the attainment tests as well as they were able so achieving at a higher level than in their normal classroom work. Only two of the covert Gifted pupils scored below 100 (93, and 98) while two others gained Raw Scores within three points of the ceiling of the appropriate Mathematics Test and were given the next more advanced test in the series.

The term 'classroom under-achievement' may be adopted when the regular standard of work performed in the classroom by a group of pupils is graded by their teacher as being a year or more below that which the group of children have otherwise shown themselves capable of producing.

The mean Standardised Score for the combined English and Mathematics Test series for the covert Gifted Sub-Group was 116 and on the tests used about eight points of Standardised Score represented a difference of one chronological year. The mean Standardised Score for the Control Group was approximately 100 and this may be taken as a rough measure of the average performance levels of the sample pupils' school classes (the teachers were originally asked to select average children as Controls). It is seen then that even allowing for statistical errors of measurement among the covert Gifted Sub-Group there was probably 'classroom under-achievement' upon the criterion stated above.

7) Range of Achievement Levels

i. 'Over-Achievers': The term 'over-achievers' will be used to refer to those children whose calculated Mathematical or English Educational Age exceeds that of their measured Mental Age on the Stanford Binet test.

12.4% of the Gifted sample obtained English or Mathematical Ages

(five and four pupils respectively) which was above that of their Stanford-Binet Mental Age.[1*] This result was unexpected. Pidgeon (1961, p.36) states that if the scales of two mental tests are the same and the means are 100 then an equal number of 'over-achievers' as 'under-achievers' may be anticipated and he argues (ibid. p.39) that where two tests are given the resultant score of the second test is likely to be nearer to the test mean when the first value was in the tail of the distribution. In the present study the nine children involved had a mean I.Q. score of 156, over three standard deviations from the mean while their subsequent attainment test scores represented even greater deviations from the respective means. Less surprising was the 'over-achievement' of six Control children with a mean I.Q. of 117.[2*]

Possible circumstances responsible for the high attainment scores reached by the nine Gifted pupils, one of whom was originally nominated by his teacher as an average pupil for inclusion in the Control Group, are:-

(1) particularly favourable home environments providing encouragement from parents and exceptional facilities for learning;

(2) stimulation and stretching at school through an enriched curriculum and/or acceleration;

1* Pidgeon (Educ. Research, Vol. IV, No.1, Nov. 1961) has shown how, when the scores from two tests involving mental measurements are used, and "if the 'intelligence' test is regarded as measuring capacity", an approximately equal number of 'over-achievers' as 'under-achievers' is implied (p.35-36). However, it seems probable that Pidgeon had in mind scores within two standard deviations of a test mean, viz. his illustration with scores on a Test 'A' and 'B' ranging from 70 to 130 (ibid.p.37) and that he is not considering an attainment score indicating 'over-achievement' when the mean I.Q. score is 156.3

2* Four Control pupils 'over-achieved' in English, two in Mathematics and none in both subject areas.

(3) harmony between home and school environments giving a high degree of emotional security; and

(4) statistical errors.

A study of beneficial or detrimental effects of affluence, deprivation or other environmental circumstances upon the scholastic achievement of the Gifted pupils has not been undertaken here but appears to be an area for future investigation.

Examples of the fictitious educational ages Gifted pupils obtained are:-

	CA	MA	Eng.EA
Child 'A'	6y. 10m.	9y. 9m.	10y. 3m.
Child 'B'	11y. 0m.	19y. 11m.	21y. 6m.
	CA	**MA**	**Maths.EA**
Child 'C'	9y. 4m.	14y. 1m.	14y. 10m.
Child 'D'	11y. 5m.	17y. 5m.	18y. 9m.

The above calculated values appear to pose a challenge for suitable curriculum stimulation to be provided for such Gifted children within the primary school.

ii. 'Under-Achievers': An Attainment Quotient of 65 or less and/or a gap of four years between Educational Age and Mental Age in either English or Mathematics have been taken as the criteria for under-achievement by individuals in this study. The cut-off point has been selected well below the theoretical values since allowance must be made for errors of measurement and for the effect of regression. It is hoped that it is sufficiently low for the majority of educationalists to agree that under-achievement has occurred, for whatever reason, since the gap taken is twice that frequently used as a criterion of retardation on Schonell's recommendation (Revised Edition 1958, p.64) and as it exceeds considerably the 2yr. 4m. taken by Yule as a criterion

for retardation in reading (1973).

Twenty Gifted children with an I.Q. mean of 174 scored below the above cut -off point in either English, Mathematics or both. The attainment of several of the Gifted pupils was six years below their mental age. Upon the same criteria six Control children under-achieved, five in Mathematics and one in English. The proportional occurrence of 'under-achievement' amongst the Gifted children is significantly greater than that found for the Control pupils ($p < .01$).

iii. 'Over- and 'Under-Achievement' Considered: The question arises as to why there should be such a great variation in the relative achievements of the Gifted pupils. It may be that since these children are by definition more mentally developed the span in achievement levels indicates that the Gifted are more susceptible to psychological and emotional influences in their environment in comparison with children of more average ability. Burt, (Yr. Bk. of Educ. 1962, p. 42) has drawn attention to the great psychological stresses under which such children may suffer. In this sample all the Gifted children enjoyed affluent home backgrounds being drawn from the middle-classes and embourgeoised working-class in a period of prosperity. Nearly all the children attended modern primary schools of a high material quality.

8) Teachers' Opinions

i. Estimates of Classroom Performance: There were marked differences between the levels of achievement of the Gifted children on the N.F.E.R. Attainment Tests and the teachers' estimates of the pupils' standards of work compared to the average class performances in the school classes of which the children were members. Figure 6/1 (a) has been drawn on the assumption that the level of attainment in such classes on the N.F.E.R. tests would not differ to any great extent from those on which

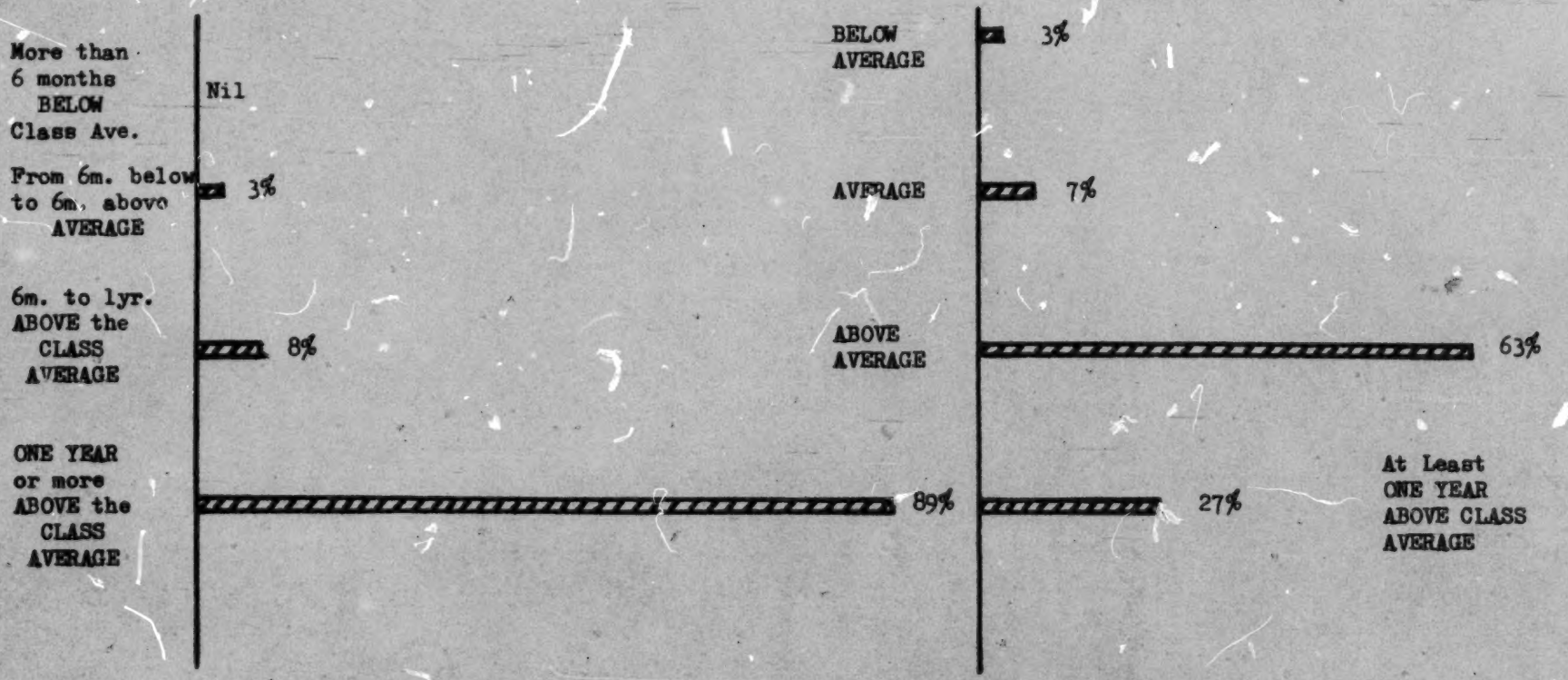
FIGURE 6/1(a)

GIFTED GROUP (73 CHILDREN)

FIGURE 6/1(b)

ATTAINMENT IN MATHS & ENGLISH (Combined Scores)

TEACHERS' ESTIMATES of SCHOOL ATTAINMENT



110(a)

Note: Means of NFER Attainment Tests and Mean performances in English Language and Mathematics of school classes involved, assumed to co-incide.

FIGURE 6/2(a)

CONTROL GROUP (64 children)

ATTAINMENT IN MATHS & ENGLISH (Combined Scores)

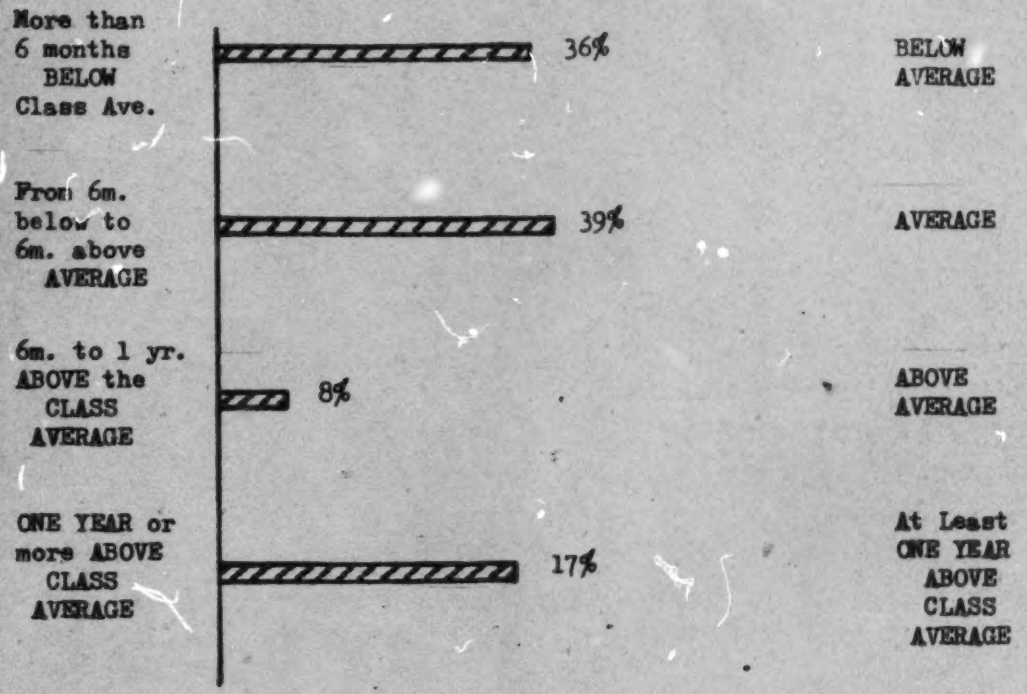
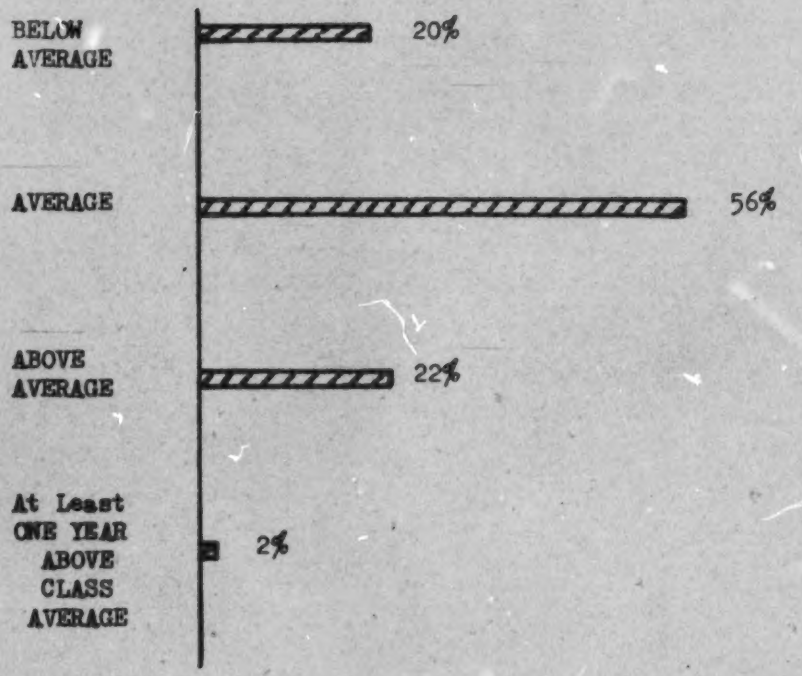

More than 6 months BELOW Class Ave.
36%
From 6m. below to 6m. above AVERAGE
39%
6m. to 1 yr. ABOVE the CLASS AVERAGE
8%
ONE YEAR or more ABOVE CLASS AVERAGE
17%

FIGURE 6/2(b)

TEACHERS' ESTIMATES of SCHOOL ATTAINMENT



Note: Means of NFER Attainment Tests and Mean performances in English Language and Mathematics of school classes involved, assumed to co-incide.

110(b)

the tests were standardised. Since there are considerable differences between the compared scores and ratings it seems probable that some incongruity between the means of the N.F.E.R. tests and of those of the school class performances in question would not alter the extent of the variation between the two markedly.

In considering the approximations of the levels of scholastic achievement reached by the Gifted Group made by the Attainment Tests and the teachers' ratings respectively, one may exclude the 27% of the Gifted Group (20 children) who obtained the highest combined Attainment Test scores, this being the proportion of the Gifted Group the teachers have indicated to be 'at least one year above the class average' and the 11% lowest scores. The remaining 62% of the Gifted sample achieved a combined attainment score showing them as having had an educational age of 1y. 0m. to 3y. 9m. above their chronological age and that for the median child as 2y. 3m. The teachers showed the work of this 62% to have been less than one year in advance of the school class mean.

The teachers' estimates of the Control pupils' school attainment levels also differ in two respects from those shown by their attainment test scores; the teachers graded more of the Group as average whereas the pupils' test scores showed larger portions as achieving both above and below the average category.

A marked discrepancy has been found between the estimates of the classroom performance of the Gifted children by their teachers and the pupils' actual behaviour on the N.F.E.R. Attainment Tests, whereas there is some similarity between the two approximations in respect of the Control children. It must be pointed out that the teachers were asked to grade the sample children's performance as a whole whereas the N.F.E.R.

tests were given in English language and Mathematics only but since the teachers have indicated elsewhere (p.65) that for 75% of the Gifted sample one of the Three R's represented their best-performed subject area, it is unlikely that this discrepancy accounts for the differences between the Attainment Tests and the teacher estimates of the Gifted pupils' scholastic levels of attainment. Accordingly, it is suggested that there was classroom under-achievement (as defined on p.107) by the Gifted Group.

A possible explanation of the relatively high mean N.F.E.R. Attainment Test scores gained by the Gifted Group, compared with their teachers' estimates of the children's normal classroom standards of work, is that the pupils were more strongly motivated to perform at a high level in a test situation of a research project when they formed a small group separated from their classroom peers than when they were part of the usual larger classroom group.

ii. Teacher Expectations: It has been said that objective attainment test scores are likely to be a superior estimate of children's actual current capabilities as compared with their teachers' opinions of their normal classroom work (Pegnato & Birch, 1959). It seems probable, too, that in this study the relatively higher N.F.E.R. Attainment scores are likely to have been the more accurate since the children did in fact produce work scoring at the higher level, although due allowance must be made for statistical errors.

Pidgeon (N.F.E.R. 1970) has shown the great importance of teacher expectations on the standard of work produced by pupils. Figure 6/1(a) and (b) show that according to the Gifted Group's attainment test scores

the current capabilities of 65% have been under-estimated by their teachers.[1*] This 'extra' learning may have taken place outside the school setting or, if a proportion was within the classroom, it apparently occurred to some extent at least without the conscious knowledge of the teachers concerned. It is also probable that the children's higher level performances could be raised still further if teacher expectations resulted in greater demands being made upon them in terms of both quality and level of difficulty of output. Such a view is in agreement with that put forward by Bridges (1969, p.5) who referring to a group of very intelligent children at Brentwood says:-

> "The children had long since become accustomed to a certain level of expectation on the part of their teachers and also probably of their parents. The result was that on the whole their level of aspiration or demand upon themselves was relatively low. For years they had mostly been coasting because they had found it easy with a certain amount of effort to maintain a good position in the class, and since the position proved satisfactory to both school and home they were satisfied".

Later, Bridges referred to the 'stint', a certain level of output with which the children had become accustomed to responding to adult expectations.

9) 'Educational Age' Relative to Curriculum Content

A Mathematical Educational Age of say 17y. 6m. is not a measure of a child's 'actual' level of mathematical ability, since the value has been obtained by extrapolation on the basis of tests of a relatively low standard. Nevertheless, it seems reasonable to suggest that given the stimulation and teaching provisions at a higher level these children would be able to attain a standard in their normal school work which was at some intermediate position between that estimated by their teachers

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1* the difference between those scoring and rated one year above the school class average: 89% - 27% = 62% plus 3% rated as below average = 65%.

to be their current level and that shown by the extrapolated N.F.E.R. score to have been their contemporary attainment age.

The manner in which more advanced teaching could be implemented in primary school has been investigated by Tempest (1974). He showed that clever children may receive additional challenge by curriculum enrichment such as:-

(1) The use of new work-cards devised by his team involving more diversified and advanced material than has been customary,

(2) The introduction of German as a second language for eight-year-olds.

(3) The conduct of scientific investigations (ibid. p.43) and the communication of the results,

(4) More advanced Mathematics, including Algebra, practical Geometry, programming on calculating-machines and for fourth-year juniors, some experience with programmes of trigonometry, the use of a slide rule, and by working through "a large part of the companion exercises to F.W.Land, 'The Language of Mathematics". (p. 64).

Other teaching materials designed specifically for use with Gifted primary school children are in course of preparation by Ogilvie.

The implementation of an enriched curriculum for Gifted pupils in primary schools is assisted by the provision of new teaching materials but appropriate practical application of these presupposes the prior identification of the Gifted pupils by their teachers.

CHAPTER 6 PART II.

DISCUSSION AND CONCLUSIONS - THE QUESTIONNAIRES

a) Physical Considerations

Over a half of the Gifted and a third of the Control pupils were first-born children. Pidgeon (1969) has shown the importance of birth position in language development and a question which might bear further investigation is the relationship between high intellectual ability to position in and the size of family. There was little difference between the Gifted and the Control Groups in physical size and in health record.

The information from the teachers on the relative sizes of the sample children in their school classes was requested to discern whether, if it became normal practice to accelerate Gifted children to school classes a year senior in order that they might have additional stimulation in their school work, they would be at a comparative disadvantage in respect of their physical size. Considering Gifted children as a group it seems such would be the case but this generalisation should be taken against the wide variation in size existing between individual Gifted children.

The school attendance rates of both the Gifted and Control Groups have been shown to be high. Apart from eliciting information on this point, since absence from school would affect the results on relative standards of scholastic performance, this question was designed to indicate the accuracy with which the questionnaire forms were completed by the parents and teachers. The remarkable coincidence of the replies from the two sources reflects the care with which the respondents completed the forms.

b) School Situation

i. Liking for School: A cheerful and pleasant environment was found in the participating schools and the great majority of the sample children were shown by the responses to like school. A measure of the reliability of the children's replies is given by the answers to a subsequent check question where almost the same proportions of both Groups as had previously shown marked favour for school chose to be at school during term-time rather than at home or somewhere else.

As regards the remaining minority of the Gifted Group, the 15% shown in the results as having reservation regarding their appreciation of school may understate the number of children involved since, when the individual questionnaires were examined, about half of this set of parent forms failed to agree with those of their off-spring so that the total number of pupils associated with a negative reply exceeded the 15% found among either the parents' or children's responses. It seems possible that some of the pupils may have hesitated to admit an attitude not in accord with the majority of their peers. The main difference between the two sample Groups on the supplementary question was that most of the Gifted minority section stated a preference for being 'Somewhere else' while the Control children's choice was to be 'At home'. It may be that the replies of the Gifted children reflect the wider span in their interests coinciding as it does with the greater vista shown in the spread of their activities elsewhere on the questionnaire. It seems that school may be less popular with the Gifted as compared with the Control children because replies elsewhere on the questionnaires suggest that some of the less intellectual activities in the curriculum receive less favour with the Gifted Group since the level to which they may pursue particular interests is to some extent limited, they have

less opportunity to follow one of their preferred occupations, the noise interrupts them when they wish to read quietly and they are rather less popular with their peers.

A comparison of the parents' responses with those of their off-spring showed that the Gifted children's parents over-estimated their off-springs' favourable feelings towards school and under-rated their negative reactions: the converse was the case with the Control pupils' parents. A proportion of the Gifted children's parents appear to have been able to gauge approximately the levels of their children's intellectual capacity but were less correct in associating a given degree of ability with a corresponding measure of liking for school.

ii. School-day: For the majority of the Gifted children play-time was the most favoured part of the school-day although a proportion preferred being in the classroom. The parents of both Gifted and Control Groups under-estimated their children's stated liking for being in the hall for music, films, etc.

The difference in emphasis regarding the preferred parts of the school-day as between children and parents is rather greater for the Gifted Group. Possibly it indicates that the parents of the Gifted have slightly less understanding of their off-springs' childish interests, appreciating rather more their intellectual perspicacity. There is a tendency, too, among the Control children's parents to over-state their off-springs' interest in the classroom - perhaps a reflection of a wish on their own part.

iii. Classroom Work: It was surprising to find that the largest proportion of the total sample of children preferred to work on their own in the classroom, a number elaborating by giving such reasons as,

'It's quieter' and 'Because noise interrupts me' (p.184 of Appendix C, Section 2). Some supporting evidence as to the children's feelings upon classroom organisation is provided in the spontaneous remarks by four parents, three of the Gifted and one of a Control child, who volunteered the information that their off-spring preferred to work alone. It was also surprising to find that a quarter of the Control Group and a sixth of the Gifted pupils preferred the more traditional form of classroom organisation. It may be that when the teacher addressed the class as a single unit there was more order and quiet and that it was for such conditions that the children expressed a preference as was explicitly stated by some of the pupils preferring to work on their own. The juniors were asked a supplementary question as to whether they preferred to work all the time or only some of it in the manner they had previously selected to which only 14% of each Group chose the first option. Since one would not expect a set of children to wish to work on their own for the whole of the time their replies seemed to indicate they understood both the main and supplementary questions.

The teachers organised their classes in modes and in proportions which coincided approximately with the children's stated preferences, the chief differences being for the sixth of the Gifted and the quarter of the Control children who said they preferred classes to be taught as a unit whereas only 5% and 7% of the Groups respectively were taught in this manner.

As regards the large proportion of the sample children who both preferred to work on their own and were so arranged that they did so, it is suggested that classroom organisation for the brighter child is an area which would reward further inquiry. The main reasons for the children's working in this way were presumably that they were at a more advanced stage with their studies and were less disturbed with their work.

There may be a correlation between the desire for such conditions of work and the intellectual ability to study, since a wish for such facilities was mainly found in the Gifted Group and was discovered, to a lesser extent, in the Control Group which included 'bright' pupils who had scored an I.Q. between 115 to 130. Why a noteworthy minority of both sample Groups preferred the class to be taught as a unit also appears to be a question worthy of further investigation.

The greater attentiveness of the Gifted children as compared with the Control Group found in this study, is in line with the earlier finding that most of the sample liked school (p. 38). It is of interest to note that pupils scoring very highly on intelligence tests are reported by their teachers as showing greater powers of concentration in the classroom.

iv. Classroom Preferences and Performances: The parents of the Gifted accurately estimated their off-springs' curriculum preferences as being Reading and Mathematics and that Pottery & Craft and Music & Movement had least popularity although these were included in the wide spread of interests enjoyed by their children. Similarly, the same curriculum areas, Reading and Mathematics & Science, are named by the teachers as being the best performed by the largest proportions of the Gifted Group while an intermediate position is taken by Creative Writing and Project and the most rarely named are Painting, Pottery & Craft and Music & Movement.

The classroom preferences and performances of the Control children were far more evenly distributed over the curriculum. Reading and Mathematics & Science obtained the largest percentages of choices by the children but the proportions of their total selections were smaller than in the case of the previous Group, while Pottery & Craft were more

frequently named. The parents of the Control pupils diagnosed their off-springs' preferences less accurately for although they correctly included Reading as among their children's 'Emphatic Likes' and Project in an intermediate position, they under-estimated seriously their off-springs' liking for Mathematics & Science and to a lesser extent the popularity of Painting and Drawing.

Mathematics was named by the teachers as the subject area in which almost a quarter of the Control children performed best but this proportion was still lower than in the case of the Gifted Group. The percentages of the Control Group rated as performing best in Creative Writing and Reading were almost the same as in the case of Painting and Pottery & Craft so that it appears that the application of the Control children's abilities was more spread and that their performances reached a relatively higher level in the less intellectually-demanding areas of the curriculum as well as in Mathematics.

The teachers failed to name a curriculum area in which the Gifted children's classroom performances were weakest for almost a quarter of the Group. Conversations with some teachers suggested that the success of the Gifted pupils in producing work of a good quality over most areas of the curriculum was the explanation for the omissions here. Music & Movement, Painting and Creative Writing were the three subject areas in diminishing order of frequency for which the responses for three-quarters of the Gifted Group showed them to be weakest.

Over a quarter of the Control children were 'poorest' in Creative Writing and half of this Group were weakest in one of the 'Three R's'. Each of the other parts of the curriculum were shown to be an area for which 10% - 12% of the Group had the lowest attainment level. This

result was in accord to a similar spread of those subject areas which the teachers selected as being the ones in which the Control children performed 'best'.

There is a considerable degree of agreement between the three sets of questionnaires regarding the classroom activities of the Gifted Group, the teachers indicating that the pupils executed their best work in the 'Three R's' while the best preferred subject areas were shown by the children and their parents to be Reading and Mathematics & Science, although the children awarded less favour to Creative Writing and the parents under-estimated their off-springs' pleasure in Reading and over-estimated their liking for Creative Writing. The lower popularity of Pottery & Craft and of Music & Movement was matched by relatively lower performance levels.

Creative Writing and Mathematics & Science were quoted by all three respondents to the questionnaires as being of intermediate and most frequent occurrence respectively as the Gifted pupils' best-performed or preferred subject areas. The English and Mathematics attainment tests fall within the same subject areas as the above and have been used to obtain a measure of the levels of the Gifted children's achievements in them. To the extent that an extrapolation from performance in Mathematics and English to levels of achievement in other academic curriculum areas is justified, the sample of the Gifted children's school-work provided by these tests is likely to have over-stated rather than under-estimated their relative levels of achievement as compared with the Control children. It may be that the under-achievement found in Mathematics and English is present to a greater extent in other curriculum areas, including those which are creative, and it seems that hypotheses to this effect would be worthy of investigation. Nevertheless, for the majority

of the Gifted Group the classroom performances were both all-round and above the averages for their school classes.

The patterns which have emerged from the three sets of forms regarding the Control children's preferences and their school class performances were less clear-cut but relative to their ability there was a tendency for the Control pupils to have a rather stronger leaning towards that part of the curriculum concerned with arts and crafts as compared with the Gifted Group.

v. Outdoor Games & Swimming: It appears that the level of interest and performance of the Gifted Group was about average, or slightly below, in attainment in school physical activities while that of the Control Group was rather above the average in their school classes. There is closer agreement between the parent and teacher questionnaires as to the parents' views on the popularity of outdoor games and on the teachers' ratings of the pupils' standards of performance. The low values of 4% for Gifted and 6% for the Control children's own stated preferences for this side of the curriculum as compared to that taking place inside the classroom may have resulted from the children not considering to the same extent as the adults that outdoor games and swimming were an integral part of the curriculum and accordingly did not name it as one of their favoured pursuits.

From the information supplied the Gifted pupils appeared poorer at physical activities than the Control Group and attained standards rather below the averages for those school classes of which they were members while the Control children's levels were above such means.

Considering the overall curriculum and comparing the two sample Groups this study has found that in relation to both interest and

performance the Gifted pupils were relatively more orientated towards classroom study and by comparison the Control Group leaned more towards physical activities.

c) Additional Teaching

Almost twice as many of the Control children's parents as compared with those of the Gifted Group were found in this study to have been involved directly with their children's education. In addition, large proportions of the parents of the Gifted (85%) and of the Control children (60%) were making a direct or indirect contribution to their children's school learning. It seems probable that the parents understated rather than exaggerated the additional teaching provisions they made since some may have believed that such measures would not have met with the approval of the schools concerned.

Possible explanations of the difference between the two sets of parents are that the Gifted children learnt more rapidly without the specific teaching than did the Control pupils and that although relative to their ability the gap between what they might have been able to attain and what they did in fact learn might have been greater, nevertheless, they came up to a standard satisfactory to the parents and accordingly the latter did not take additional measures aimed at assisting their children's school progress. This deduction is in line with the viewpoint expressed by both Tempest (1971) and Bridges (1969) in whose opinion 'gifted' children are able to satisfy both their parents and teachers in the level of work which they produce without exerting themselves to use their capabilities to the full. It follows that if the level of parent expectations is roughly on a par for children as a whole in the same socio-economic group, it may be expected that where there are average or

bright-average children whose work is below such a parental threshhold level, then the latter children may receive extra stimulation and teaching, whereas the Gifted Group do not do so as the work which they perform satisfies parental demands. Such children may be performing at a level below the standard of which they are capable but this fact passes unnoticed.

If Gifted children received additional stimulation equivalent in extent to that afforded to the Control Group, but in accord with their particular circumstances, one might expect that their levels of attainment would be raised. Were additional resources to be allocated to the development of intellectual talent in proportions corresponding to those justifiably provided for less able children, standards of achievement might be expected to be raised still further. Hunt (1961, ed. Wiseman, p.338) supports this view stating that it is unlikely that education in any society maximises the potential of the individuals of which it is composed and continues:-

> "In view of the interaction between genotype and environment it would be probable that individual differences would be increased and that the biggest gains would occur in those genotypes with the highest hypothetical potential".

d) Friendships

More than half of both sample Groups show a preference for other children, most of them replying that they have a friend or friends at school which claim was confirmed by their parents. The chief difference between the Gifted and Control children was that of the remainder, whereas over a third of the Control pupils chose to be with their parents, a smaller percentage of the Gifted children selected this option, the other proportion either not replying or choosing to be with adults.

Twice as many of the parents of the Gifted Group compared to those of the Control children believed their off-spring preferred the company of older children. If, as it appears, the out-of-school associates of a majority of the Gifted Group are those senior to themselves the question arises as to whether they might be assimilated into an older age group in school which might not only provide learning conditions more suitable for their mental development but also be giving them a more amenable social environment. This possibility must be weighed against the effects of smaller physical size due to lower chronological age (p.59).

The teachers showed the majority of the sample to be of average popularity in their school classes, the main difference between the Groups being the 17% of the Gifted but only 3% of the Control Group described as not popular with the peer Group. There is only partial agreement between the questionnaires completed by the sample children, their parents and teachers as to those individuals not popular with their peers, since, of the thirteen names mentioned, only four appear on two of the three forms. Accordingly, the validity of the replies in this respect must be considered doubtful.

The sets of responses on social relationships for the Control Group overall were largely in accord but there were again differences regarding those few (four) individuals who were not well-adjusted with their peer groups.

On average the Gifted Group were found to have been less popular than the Control children and among them a larger proportion tended to have poor social relationships with their peer group. For both Groups there was inconsistencies between the set of three replies concerning those children thought to suffer a degree of unpopularity. It seems

possible that there was an element of understatement here, one or other of the three parties hesitating to describe a child as friendless lest it showed the individual in an unfavourable light. It is suggested here that the most likely explanation as to why the Gifted children tended to be less popular with their peers was due to their greater interest in intellectual pursuits, their desire to probe more deeply or their wish to study at a more advanced level, as was indicated by the general remarks made by their parents and teachers. The three sets of respondents were agreed regarding the Gifted children's greater pleasure in reading, the very nature of which is anti-social.

e) Home Interests

The parents were in a position to observe their children's preferred home occupations. The replies of the children and the parents were roughly in agreement but both sets of parents showed inaccuracies in judging their off-springs' stated likes since they over-estimated their interest in reading and sport and under-estimated their pleasure in watching TV. As the parents may have felt less approval for TV viewing than for the other two occupations, it seems possible that their own wishes coloured their stated opinions.

The popularity of Outdoor Games & Swimming with the Gifted Group reiterates their juvenility and enjoyment of childish activities. This finding is in agreement with observations made on 'gifted' children during the course of the 'Brentwood Experiment' (Bridges, 1969, p.32-33). The favour accorded to watching TV by the Gifted Group may be a pointer in the same direction but since no information is available as to the type of programmes viewed it cannot be assumed to be the case. Nevertheless, the high intellectualism of this exceptional set of children was shown by

their extensive interest in reading and their lesser but still noteworthy preoccupation with problem-solving activities such as those involved in the solution of mathematical problems.

f) Parents' and Teachers' Remarks

The parents' remarks suggested that characteristics otherwise similar within the two sample Groups were held to more extreme degrees among the Gifted children; the teachers' comments, too, seemed to have implied a tendency for the Gifted pupils to have possessed particular features with greater intensity than was the case with the Control pupils. There appears to have been no correspondence between high intellectual ability and particular personality characteristics in this sample of exceptional children.

The superior intelligence of the Gifted pupils was seen during the course of their day-to-day activities whether by their speed and intellectual competence in the school classrooms or in their greater interest in thought-provoking activities at home. The Control children appeared to have been more popular with their peer groups in school and to have had a general interest in a wide variety of occupations at home but where intellectual processes were involved frequently to have engaged upon them at a more superficial level by comparison with the Gifted Group.

CHAPTER 6 - PART III

HEAD TEACHERS' OPINIONS

A measure of the interest of Head Teachers in the education of the intellectually able was afforded by the 79% response to postal questionnaires and by the 100% of the fifteen Head Teachers forming a 10% random sample in the population of schools in the Local Education Authority area examined. The term 'high-flyers' was used on the questionnaires as being a term used by the teaching profession and as a synonym for the intellectually 'gifted' having less emotive connotations.

Just over one half the responding schools believed they had one or more 'high-flyers' in attendance. The Head Teachers were not asked to estimate the number of pupils in this category but one of the larger schools volunteered the number as eighteen and a second suggested about 25% of the school's pupils fell within this classification. By contrast, the Head Teachers of fifty-nine schools considered that they had not 'high-flyers' attending. It seems likely, as was found by Pegnato & Birch (1959), that errors are made in the identification of gifted children both by classifying those in this category who do not have exceptional intellectual ability and by omitting to include others who do so. While accepting that the distribution of intellectually able children is spread unevenly between schools it seems unlikely that a primary school with several hundred unselected pupils had 25% in the top 1% - 2% of intellectual ability and it is suggested here that error of the first type was present. Error of the second type appears to occur among those Head Teachers in fifty-nine schools who believed no 'high-flyers' were in attendance. The pupil roll in these latter schools totalled 8,918 children and it is

improbable that among such a very large number of children, pupils in the top 1% - 2% of intellectual ability were not present. It may be that most of the children involved were the 'covert' gifted (p.93), since they were not identified by teachers, many of whom in a later part of the questionnaire showed their concern for the intellectual development of the 'high-flyers'.

TABLE 6/1 Schools Identifying and Not Identifying 'High-Flyers' classified According to Size of Pupil Roll

Roll Size	High-Flyers Identified		High-Flyers - None-Identified	
	No. of Schools	Total Pupils on Roll	No. of Schools	Total Pupils on Roll
0 - 99	20	1,091	27	1,287
100 - 199	16	2,207	16	2,582
200 - 299	9	2,180	8	1,948
300 - 399	10	3,074	5	1,757
400 & Over	5	2,433	3	1,344
TOTALS	60	10,515	59	8,918

TABLE 6/2 Head Teachers' Replies on Schools' Ability

Roll Size	Total No. of Schools in Category	Affirmative Replies from:- %
0 - 99	47	78.7%
100 - 199	32	81.3%
200 - 299	17	88.2%
300 - 399	15	73.3%
400 & Over	8	66.6%

Among the four-fifths of the Head Teachers who were of the opinion that they would be able to cater for the needs of highly-able pupils was one who said that the children could 'forge ahead' since books for the 12-plus age group were available. This remark appears to have reflected too low a level of expectancy from gifted juniors, a deduction in line with the level at which many teachers rated the standard of work of the present sample of gifted pupils which for many was below both the children's educational age on N.F.E.R. tests (p.110) and their mental age on the Stanford Binet scale.

The largest proportion of affirmative responses regarding ability to educate 'high-flyers' were received from the medium-sized schools (Table 6/1) of which the largest proportion, as compared with schools of other sizes, believed they had no exceptionally intellectual children in attendance. The few large schools affirmed proportionately least frequently their ability to cater for the gifted. Whether or not this latter position is the case, and if so, why - are questions which might bear further investigation.

The need to 'stretch' gifted children was specified the most frequently by Heads among the 90% replying 'Yes' to the question on whether the 'high-flyers' had special educational needs. A few Heads reported that attention was being given to the intellectually able on parallel lines to that afforded to 'slow' learners. However, it is disturbing to find that under their general remarks the majority of Heads refer in one way or another to deliberate under-achievement on the part of gifted children in order to gain acceptance by their peers and the difficulty faced by teachers in identifying such pupils.

In their comments the Heads have shown themselves primarily concerned with the optimum development of their pupils as individuals, an expression of the current child-centred philoscphy and in itself desirable but the place in society that today's children will later fill is a question of major importance which effects both the gifted pupils and the other children in the benefits which will be derived by all in the future. The development of qualities of leadership among the gifted, of ethical standards and of attitudes of social responsibility has received very little attention in the Head Teachers' remarks apart from the implication that such matters are of importance in respect of all children. There is little discussion or consideration of the fact that gifted children by their very nature have within themselves the needs of greater benefit or greater damage to the welfare of their fellows.

Two problems emerge requiring discussion regarding pupils with the top 1% - 2% of intellectual ability in primary schools - first, how may identification be improved - apparently among almost 9,000 children none were identified. Secondly, once the children are identified, what are their educational needs. If it is to be'stretched', what form should this take and what curriculum should be devised for them.

CONCLUDING REMARKS

The distinguishing feature of gifted children as defined in this study is their superior intellectual qualities. Such pupils present a problem not found in their less-able contemporaries - that the high level reasoning powers which they possess may well exceed those of the adult in whose charge and under whose authority they have been placed. The children's superior intellectual ability is generally not matched by knowledge as they have had insufficient time to make their own the distilled wisdom of previous generations. Frictions may arise between a frustrated highly intelligent but inexperienced child and a competent and experienced but otherwise unexceptional parent or teacher.

Gifted children may use the great qualities of learning and reasoning they possess for objectives different from those considered to be socially desirable by their elders since there is no reason to assume the children's current aspirations may be necessarily those of the adult world in which they live any more than is the case with other children. The difference between the gifted and their less able peers is that the former have the ability to use their intellectual talents in their own immediate interests and have mental skills such that they may deceive the person in whose charge they are placed whereas other children have not such capabilities. The problems associated with covert gifted children are not new - they were already recognised by Rousseau (1762, Everyman ed. p.70-71):-

> "As a child the young Cato was taken for an idiot by his parents; he was obstinate and silent, and that was all they could see in him".

Rousseau continues recounting that the Abbe de Condillac was "reckoned a fool by his family".

In the present enquiry, a number of the Head Teachers referred to the importance of peer groups in the scholastic attainment of highly-intellectual pupils and one may add that the standards set by child peers may not conform to those held by parents and teachers. Such difficulties exist irrespectively of intelligence, the difference being with the intellectually able that such irregularities as do occur are likely to be more difficult to detect and control.

The present study has been concerned with the scholastic attainment levels, relative to their measured ability, of two groups of children both being drawn from the middle classes and the embourgeoised working-class so that differences found between the two sets of pupils cannot be ascribed to social deprivation. Reading attainment was similar for the two groups but the Gifted infants were less advanced than the Control children for Mathematics while the Gifted Group as a whole attained at a relatively lower level in English language. The null hypothesis that there was no difference between the relative performance levels of the two Groups, even where it has had to be rejected, cannot be equated with a positive acceptance of the hypothesis of under-achievement.

Additional requirements which would be needed prior to the establishment of criteria within which under-achievement might be said to occur generally would include:-

a) a randomised sample of gifted children which has not been available in this nor in previous studies, and

b) statistically reliable tests for assessing the scholastic attainment levels of children in the top 2% of the intelligence continuum.

As regards an improved instrument for the assessment of measured ability it is anticipated that this will be provided by the new British Intelligence Test currently in its final stages of development.

Knowledge of the characteristics and distribution of intellectually gifted children might be obtained from a random sample of such children covering the three categories named - the successful, the maladjusted and the covert. An unbiased sample might be identified by the selection of several Local Education Authority areas chosen so as to provide a balance for social class composition, economic standards and emigrant population. In these areas a 10% random selection of the primary schools might be taken and their junior pupils be screened with a group intelligence test. Those children scoring above a low cut-off point might then be examined further by a battery of tests similar to those devised by Pegnato and Birch (1959).

As regards the scholastic achievement levels of high-ability pupils assessment of their standards of attainment would be facilitated by the production of tests encompassing a greater range of difficulty in the test items. In this way a ceiling might be provided for the gifted children, yet control children would be able to score on the same test so that comparative standards of achievement might be gauged on a single instrument.

The present project claims only to be a pilot study with the limited objective of throwing added light on some features of gifted pupils. It has been established that highly-intellectual children are to be found in Local Authority primary schools and that a number of them are unrecognised by their teachers. Within the limits mentioned above,

there appears also to be reasonable grounds to suggest that the capabilities of some such children were so superior that even where they were recognised by their teachers the pupils were not attaining up to the levels of which they were capable. According to the attainment test scores obtained, a great spread was found between the apparent high and low standards of achievement of individual Gifted pupils although of similar measured intelligence. This finding raises the question as to why this should have been the case. It seems, too, that the majority of the parents of both Groups of children assisted their off-spring with their school-work - either directly or indirectly. It would be interesting to know to what extent this practice has become general among other social classes as a result of the raised educational standards of parents within the country.

A great deal of work needs to be done to confirm or refute some of the possibilities and probabilities that have been found in this study and particularly to give consideration to the scholastic environment of intellectually gifted children among the less favoured social and economic classes and where schools are less forward-looking and less well-staffed compared with those covered by this study. It is suggested that any shortcomings which have been found to exist in the environment of gifted pupils here are likely to be found to a greater degree in less well-favoured socio-economic conditions.

The growing recognition of the importance of the full educational, moral and social development of intellectually gifted children has been underlined by the recent 'World Conference on Gifted Children' held in London which was attended by delegates from fifty-five states, including

industrial and under-developed countries and those with different political systems and religions. Among the peoples represented were:- the U.S.A., Brazil, Ghana, Bulgaria, India, Kuwait, Israel, New Zealand, etc. United Kingdom representatives included those from the Department of Education & Science, Local Education Authorities, universities, institutes and colleges of education, schools, professional organisations of medical personnel, psychiatrists, psychologists, teachers, social and welfare services.

Reports given from a number of the foreign delegates showed the increased interest and concern about gifted children current in their respective countries. The United States' Government has appointed a Director for the Education of the Gifted and Talented, excluding physical skills, and leaders to develop work with gifted children are being trained in forty-eight States. In Israel experiments are in progress with special classes for the gifted in selected primary schools. In India teams are seeking out talented youth in the provinces. A second world conference will be held in California in 1977 and an international committee has been set up to co-ordinate research and other endeavours on behalf of gifted children.

In a recent letter in the 'Times' (20.9.1975) a Soviet official referred to special schools in the U.S.S.R. for the academically gifted in mathematics, science, languages and for the cultural arts. He explained that children were selected as a result of three rounds of Olympiads and special studies for three weeks in a summer camp, solely upon the "gifts of a child" since, he adds later, "such youth is the golden fund of any State".

It is to be hoped that the renewed world-wide interest in the full development of intellectually and creatively gifted children may promote benefits for all and that this country can contribute to knowledge so that the talents of the gifted may be brought to fruition for their own benefit and that of society.

APPENDIX A

TABLE A/1 — 73 EXPERIMENTAL GROUP CHILDREN
CHRONOLOGICAL AGE AND STANFORD BINET SCORE

IDENT NO.	CHRON AGE	MENTAL AGE	IQ
1	4yrs 7m	8yrs 4m	184
2	5yrs 6m	8yrs 10m	168
3	5yrs 7m	8yrs 6m	159
4	5yrs 9m	9yrs 2m	167
5	5yrs 9m	10yrs 0m	183
6	5yrs 10m	8yrs 0m	142
7	5yrs 10m	8yrs 0m	142
8	5yrs 11m	8yrs 2m	143
9	6yrs 4m	9yrs 2m	149
10	6yrs 5m	9yrs 8m	155
11	6yrs 6m	9yrs 0m	142
12	6yrs 8m	11yrs 4m	176
13	6yrs 8m	9yrs 6m	146
14	6yrs 11m	11yrs 6m	170
15	6yrs 11m	11yrs 0m	163
16	6yrs 11m	10yrs 6m	155
17	7yrs 0m	10yrs 4m	150
18	7yrs 1m	12yrs 7m	182
19	7yrs 2m	10yrs 4m	143
20	7yrs 2m	11yrs 0m	156
21	7yrs 3m	10yrs 4m	144
22	7yrs 4m	12yrs 6m	174
23	7yrs 4m	12yrs 0m	166
24	7yrs 5m	10yrs 8m	145
25	7yrs 6m	10yrs 8m	143
26	7yrs 6m	11yrs 8m	157
27	7yrs 7m	14yrs 2m	201
28	7yrs 7m	11yrs 6m	153
29	7yrs 9m	12yrs 8m	164
30	7yrs 9m	11yrs 4m	146
31	7yrs 11m	12yrs 10m	162
32	7yrs 11m	13yrs 10m	175
33	8yrs 0m	11yrs 10m	147
34	8yrs 0m	11yrs 8m	145
35	8yrs 2m	13yrs 10m	168
36	8yrs 3m	12yrs 8m	152
37	8yrs 4m	14yrs 4m	171
38	8yrs 4m	15yrs 2m	181
39	8yrs 5m	16yrs 5m	193
40	8yrs 5m	14yrs 6m	170
41	8yrs 6m	12yrs 6m	145
42	8yrs 6m	17yrs 9m	207
43	8yrs 7m	17yrs 1m	196
44	8yrs 8m	14yrs 10m	168
45	8yrs 9m	14yrs 10m	166
46	8yrs 10m	19yrs 2m	213
47	8yrs 11m	13yrs 2m	144
48	9yrs 1m	11yrs 8m	147
49	9yrs 1m	14yrs 8m	158
50	9yrs 4m	14yrs 4m	149
51	9yrs 4m	13yrs 6m	141
52	9yrs 6m	16yrs 10m	177
53	9yrs 7m	15yrs 4m	156
54	9yrs 7m	14yrs 8m	148
55	9yrs 10m	17yrs 1m	167
56	10yrs 1m	17yrs 8m	168
57	10yrs 1m	16yrs 0m	153
58	10yrs 3m	15yrs 4m	144
59	10yrs 6m	19yrs 0m	173
60	10yrs 8m	16yrs 8m	149
61	10yrs 8m	18yrs 5m	165
62	10yrs 9m	16yrs 2m	144
63	10yrs 10m	16yrs 5m	145
64	10yrs 11m	16yrs 9m	147
65	10yrs 11m	16yrs 4m	143
66	10yrs 11m	18yrs 6m	161
67	11yrs 1m	21yrs 1m	190
68	11yrs 5m	17yrs 1m	143
69	11yrs 6m	17yrs 6m	145
70	11yrs 7m	18yrs 5m	151
71	11yrs 7m	17yrs 5m	143
72	11yrs 8m	19yrs 2m	156
73	12yrs 10m	18yrs 10m	141

TABLE A/2

64 CONTROL GROUP CHILDREN
CHRONOLOGICAL AGE AND STANFORD BINET SCORE

IDENT No.	CHRON AGE	MENTAL AGE	IQ
1a	5yrs 7m	7yrs 0m	129
2a	5yrs 9m	7yrs 10m	102
3a	5yrs 10m	6yrs 9m	118
4a	7yrs 11m	9yrs 4m	116
5a	5yrs 8m	6yrs 4m	113
6a	6yrs 2m	7yrs 6m	124
7a	6yrs 10m	7yrs 2m	105
8a	6yrs 5m	8yrs 2m	130
9a	6yrs 4m	7yrs 8m	123
10a	None	None	None
11a	6yrs 10m	7yrs 10m	115
12a	7yrs 6m	8yrs 8m	115
13a	7yrs 3m	7yrs 4m	100
14a	7yrs 7m	8yrs 8m	113
15a	7yrs 3m	8yrs 8m	120
16a	6yrs 11m	8yrs 10m	129
17a	8yrs 1m	8yrs 10m	107
18a	9yrs 1m	10yrs 6m	113
19a	7yrs 6m	8yrs 0m	106
20a	7yrs 3m	8yrs 4m	115
21a	7yrs 0m	8yrs 4m	120
22a	8yrs 0m	9yrs 6m	117
23a	None	None	None
24a	7yrs 5m	8yrs 4m	112
25a	8yrs 4m	9yrs 10m	116
26a	7yrs 2m	9yrs 2m	129
27a	7yrs 9m	9yrs 8m	124
28a	7yrs 5m	9yrs 4m	126
29a	7yrs 4m	9yrs 2m	125
30a	7yrs 9m	8yrs 6m	108
31a	7yrs 9m	9yrs 0m	115
32a	7yrs 1m	8yrs 10m	125
33a	8yrs 11m	9yrs 2m	100
34a	8yrs 2m	10yrs 0m	121
35a	7yrs 6m	9yrs 8m	129
36a	8yrs 7m	10yrs 2m	116
37a	8yrs 5m	10yrs 8m	125
38a	None	None	None
39a	9yrs 8m	10yrs 8m	107
40a	None	None	None
41a	9yrs 5m	12yrs 8m	130
42a	None	None	None
43a	8yrs 0m	9yrs 3m	114
44a	8yrs 10m	11yrs 6m	127
45a	8yrs 11m	10yrs 4m	113
46a	9yrs 0m	10yrs 6m	114
47a	10yrs 7m	12yrs 8m	116
48a	8yrs 8m	11yrs 5m	129
49a	9yrs 1m	10yrs 4m	111
50a	10yrs 5m	13yrs 2m	122
51a	9yrs 7m	11yrs 0m	111
52a	9yrs 6m	11yrs 0m	113
53a	10yrs 8m	14yrs 5m	130
54a	10yrs 11m	11yrs 10m	106
55a	11yrs 6m	13yrs 8m	115
56a	10yrs 2m	13yrs 8m	130
57a	10yrs 0m	11yrs 4m	110
58a	10yrs 0m	8yrs 6m	83
59a	None	None	None
60a	11yrs 4m	15yrs 3m	129
61a	12yrs 1m	12yrs 6m	102
62a	11yrs 8m	12yrs 8m	106
63a	None	None	None
64a	10yrs 11m	13yrs 2m	117
65a	11yrs 4m	14yrs 0m	119
66a	11yrs 7m	9yrs 2m	80
67a	11yrs 0m	13yrs 10m	121
68a	None	None	None
69a	11yrs 6m	13yrs 4m	113
70a	11yrs 5m	13yrs 2m	112
71a	11yrs 3m	14yrs 10m	127
72a	11yrs 8m	14yrs 11m	123
73a	None	None	None

APPENDIX B

TABLE B/1 MAIN GROUPS

EDUCATIONAL QUOTIENTS FOR READING AND ENGLISH LANGUAGE $\left(\frac{EA}{MA} \times 100\right)$

GROUP	TEST	NO. TESTED	MEAN CHRON. AGE	MEAN STAN-B MENTAL AGE	MEAN NFER EDUC. AGE	MEAN $\frac{EA}{MA} \times 100$	't' RATIO	SIGNIFICANCE
GIFTED	Reading	17	6y 7m.	10y 0m.	8y 9m.	87	0.98	Not. Sign.
CONTROL	"	16	6y 7m.	7y 8m.	6y 5m.	82		
GIFTED	A.2	34	7y 0m.	10y 11m.	8y 11m.	81	1.00	Not Sign.
CONTROL	"	32	7y 2m.	8y 6m.	7y 1m.	84		
GIFTED	B.2	17	8y 8m.	14y 6m.	11y 6m.	80	1.46	.2
CONTROL	"	11	9y 1m.	10y 9m.	9y 1m.	85		
GIFTED	C.2	13	9y 6m.	16y 3m.	13y 3m.	82	2.29	.1
CONTROL	"	8	10y 0m.	11y 6m.	10y 5m.	90		
GIFTED	D.2	19	10y 9m.	17y 9m.	14y 9m.	84	0.40	Not Sign.
CONTROL	"	13	11y 4m.	13y 3m.	11y 3m.	85		

TABLE B/2

HIGH AND LOW IQ SUB-GROUPS
EDUCATIONAL QUOTIENTS FOR READING AND ENGLISH $\left(\frac{EA}{MA} \times 100\right)$

GROUP	TEST	NO. TESTED	MEAN CHRON. AGE	MEAN STAN-B MENTAL AGE	MEAN NFER EDUC. AGE	MEAN $\frac{EA}{MA} \times 100$	't' RATIO	SIGNIFICANCE
GIFTED	Reading	5	6y 3m	10y 6m	8y 9m	83	0.40	Not Sign.
CONTROL	"	10	6y 9m	7y 7m	6y 2m	81		
GIFTED	A.2	15	7y 1m	11y 11m	9y 2m	76	1.77	.1
CONTROL	"	19	7y 3m	8y 2m	7y 10m	83		
GIFTED	B.2	9	8y 4m	15y 3m	11y 10m	77	3.48	.01
CONTROL	"	8	8y 11m	10y 2m	9y 1m	89		
GIFTED	C.2	8	9y 4m	17y 4m	13y 2m	76	3.37	.01
CONTROL	"	6	10y 3m	11y 3m	10y 2m	91		
GIFTED	D.2	7	10y 3m	18y 9m	14y 3m	76	2.71	.05
CONTROL	"	9	11y 3m	12y 7m	10y 10m	86		

Note: High I.Q. Children scoring IQ 160 or over on Stanford Binet.
Low I.Q. Children scoring IQ 120 or under on Stanford Binet.

TABLE B/3 EDUCATIONAL QUOTIENTS ($\frac{EA}{MA} \times 100$)

FOR COMBINED SCORES FOR ENGLISH

SERIES A.2, B.2, C.2, D.2 & E.2

GROUP	NO.	MEAN CHRON. AGE	MEAN MENTAL AGE	MEAN NFER ENG. AGE	MEAN RATIO ENG. $\frac{EA}{MA} \times 100$	't' RATIO	SIGNIF-ICANCE p <
GIFTED	73	8y. 8m.	14y. 0m.	11y. 5m.	81.58	-2.20	.05
CONTROL	64	8y. 9m.	10y. 4m.	8y.10m.	85.50		
HIGH IQ SUB GP.	31	8y. 5m.	14y. 11m.	11y. 5m.	77.06	-3.82	.001
LOW IQ SUB GRP.	41	8y.10m.	9y. 11m.	8y. 6m.	86.04		

TABLE B/4 MAIN GROUPS

ACHIEVEMENT INDICES FOR READING AND ENGLISH LANGUAGE (MENTAL AGE LESS EDUCATIONAL AGE)

GROUP	NO.	TEST	MEAN MENTAL AGE	MEAN EDUC. AGE	MEAN DIFFE-RENCE MA-EA	't' RATIO	SIGNIF-ICANCE p <
GIFTED	17	Reading Test A	10y. 0m.	8y. 9m.	1y. 3m.	0.20	Not Sign.
CONTROL	16	"	7y. 8m.	6y. 5m.	1y. 4m.		
GIFTED	34	A.2	10y.11m.	8y.11m.	2y. 1m.	2.26	0.05
CONTROL	32	"	8y. 6m.	7y. 1m.	1y. 5m.		
GIFTED	17	B.2	14y. 6m.	11y. 6m.	3y. 0m.	2.69	0.02
CONTROL	11	"	10y. 9m.	9y. 1m.	1y. 8m.		
GIFTED	13	C.2	16y. 8m.	13y. 2m.	3y. 1m.	3.33	0.01
CONTROL	8	"	11y. 6m.	10y. 5m.	1y. 1m.		
GIFTED	19	D.2	17y.9m.	14y.10m.	2y. 11m.	1.68	0.10
CONTROL	13	"	13y. 3m.	11y. 3m.	2y. 0m.		

TABLE B/5

HIGH AND LOW IQ SUB-GROUPS

ACHIEVEMENT INDICES FOR READING AND ENGLISH (MENTAL AGE LESS EDUCATIONAL AGE)

SUB-GROUP	NO.	TEST	MEAN MENTAL AGE	MEAN ENG. EDUC. AGE	MEAN DIFFER-ENCE MA-EA	't' RATIO	SIGNIF-ICANCE p<
GIFTED	5	Reading Test A	10y. 6m.	8y. 9m.	1y. 9m.	0.76	Not Sign.
CONTROL	10	"	7y. 7m.	6y. 2m.	1y. 5m.		
GIFTED	15	A.2	11y.11m.	9y. 1m.	2y.10m.	3.51	0.01
CONTROL	19	"	8y. 2m.	6y.10m.	1y. 4m.		
GIFTED	9	B.2	15y. 3m.	11y.10m.	3y. 5m.	4.	0.001
CONTROL	8	"	10y. 2m.	9y. 1m.	1y. 1m.		
GIFTED	8	C.2	17y. 4m.	13y.2m.	4y. 2m.	4.90	0.001
CONTROL	6	"	11y. 3m.	10y.3m.	1y. 0m.		
GIFTED	7	D.2	18y. 9m.	14y.3m.	4y. 6m.	3.99	0.01
CONTROL	9	"	12y. 7m.	10y.10m.	1y. 9m.		

TABLE B/6

ACHIEVEMENT INDICES FOR COMBINED ENGLISH SCORES A.2, B.2, C.2, D.2, - MENTAL AGE LESS EDUCATIONAL AGE

GROUP	NO.	MEAN CHRON. AGE	MEAN MENTAL AGE	MEAN EDUC AGE	MEAN DIFFER-ENCE MA-EA	't' RATIO	SIGNIF-ICANCE p<
ALL GIFTED	73	8y. 8m.	14y. 0m.	11y. 5m.	2y. 7m.	4.67	.001
ALL CONTROL	64	8y. 9m.	10y. 3m.	8y. 9m.	1y. 6m.		
HIGH IQ SUB GROUP	31	8y. 5m.	14y.11m.	11y. 7m.	3y. 4m.	6.61	.001
LOW IQ SUB GROUP	41	8y.10m.	9y.11m.	8y. 6m.	1y. 4m.		

TABLE B/7

MAIN GROUPS - MATHEMATICS

EDUCATIONAL QUOTIENTS $\left(\frac{EA}{MA} \times 100\right)$

GROUP	TEST	NO.	MEAN CHRON. AGE	MEAN STAN-B MENTAL AGE	MEAN NFER EDUC. AGE	MEAN $\frac{EA}{MA}\times 100$	't' RATIO	SIGN-IFIC-ANCE p<
GIFTED	Basic 'A'	32	6y.11m.	10y.10m.	8y. 0m.	75.13	-3.53	0.001
CONTROL	"	30	7y. 1m.	8y. 3m.	6y. 9m.	82.40		
GIFTED	Basic 'B'	12	8y. 1m.	13y. 0m.	11y. 3m.	86.58	-0.20	-
CONTROL	"	10	8y. 3m.	10y. 1m.	8y.10m.	87.5		
GIFTED	Basic 'C'	21	9y. 2m.	15y. 6m.	13y. 3m.	86.6	+2.35	+0.05
CONTROL	"	17	9y. 6m.	11y. 1m.	8y. 4m.	74.9		
GIFTED	DE	25	10y. 6m.	17y. 6m.	15y. 6m.	88.36	+0.74	-
CONTROL	"	14	11y. 1m.	13y. 0m.	11y. 3m.	85.21		

TABLE B/8

MATHEMATICS

HIGH AND LOW IQ SUB-GROUPS

EDUCATIONAL QUOTIENTS $\left(\frac{EA}{MA} \times 100\right)$

GROUP	TEST	NO.	MEAN CHRON. AGE	MEAN STAN-B MENTAL AGE	MEAN NFER EDUC. AGE	MEAN $\frac{EA}{MA}$ x100	't' RATIO	SIGN-IFIC-ANCE p<
GIFTED	BASIC'A'	14	7y. 0m.	11y.10m.	8y. 3m.	70.21	-5.43	0.001
CONTROL	"	19	7y. 3m.	8y. 2m.	6y.10m.	83.42		
GIFTED	BASIC'B'	7	7y.11m.	13y. 5m.	11y. 3m.	84.4	-0.97	-
CONTROL	"	6	8y. 2m.	9y. 7m.	8y. 8m.	90.0		
GIFTED	BASIC'C'	12	8y.11m.	16y. 2m.	13y. 9m.	87.6	+1.79	+0.10
CONTROL	"	12	9y. 7m.	10y. 7m.	8y. 3m.	77.0		
GIFTED	DE	11	10y. 0m.	18y. 5m.	16y.11m.	86.18	+1.11	-
CONTROL	"	10	11y. 1m.	12y. 5m.	10y. 2m.	80.80		

TABLE B/9

MATHEMATICS

EDUCATIONAL QUOTIENTS $\left(\frac{EA}{MA} \times 100\right)$

FOR COMBINED SCORES, BASIC 'A', 'B', 'C' & 'DE'

GROUP	NO.	MEAN CHRON. AGE	MEAN MENTAL AGE	MEAN NFER AGE	MEAN RATIO $\frac{EA}{MA}$ x100	't' RATIO	SIGNIF-ICANCE p<
GIFTED	72	8y. 9m.	14y. 2m.	11y. 8m.	81.86	-0.20	-
CONTROL	64	8y. 8m.	10y. 3m.	8y. 5m.	82.12		
HIGH IQ SUB GP.	31	8y. 6m.	15y. 2m.	12y. 0m.	78.83	-1.14	.2
LOW IQ SUB GP.	41	9y.11m.	9y.11m.	8y. 1m.	81.87		

TABLE B/10

MAIN GROUPS - MATHEMATICS
ACHIEVEMENT INDICES (MENTAL AGE LESS EDUCATIONAL AGE)

GROUP	NO.	TEST	MEAN MENTAL AGE	MEAN EDUC. AGE	MEAN DIFFER-ENCE MA-EA	't' RATIO	SIGNIF-ICANCE p<
GIFTED	32	Basic 'A'	10y.10m.	8y. 0m.	2y. 10m.	5.16	0.001
CONTROL	30	"	8y. 3m.	6y. 9m.	1y. 6m.		
GIFTED	12	Basic 'B'	13y. 0m.	11y. 3m.	1y. 9m.	0.95	-
CONTROL	10	"	10y. 1m.	8y.10m.	1y. 3m.		
GIFTED	21	Basic 'C'	15y. 6m.	13y. 3m.	2y. 3m.	-0.71	-
CONTROL	17	"	11y. 0m.	8y. 4m.	2y. 8m.		
GIFTED	25	DE	17y. 6m.	15y. 6m.	2y. 0m.	0.46	-
CONTROL	14	"	13y. 0m.	11y. 3m.	1y. 9m.		

TABLE B/11

MATHEMATICS

HIGH AND LOW IQ SUB-GROUPS

ACHIEVEMENT INDICES (MENTAL AGE LESS EDUCATIONAL AGE)

SUB-GROUP	NO.	TEST	MEAN MENTAL AGE	MEAN EDUC. AGE	MEAN DIFFER-ENCE MA-EA	't' RATIO	SIGNIF-ICANCE p<
GIFTED	14	Basic 'A'	11y.10m.	8y. 3m.	3y. 7m.	6.75	0.001
CONTROL	19	"	8y. 2m.	6y.10m.	1y. 4m.		
GIFTED	7	Basic 'B'	13y. 5m.	11y. 4m.	2y. 1m.	1.72	-
CONTROL	6	"	9y. 7m.	8y. 8m.	11m.		
GIFTED	12	Basic 'C'	16y. 2m.	13y.10m.	2y. 4m.	-0.01	-
CONTROL	12	"	10y. 7m.	8y. 3m.	2y. 4m.		
GIFTED	11	DE	18y. 5m.	16y.11m.	2y. 6m.	0.42	-
CONTROL	10	"	12y. 5m.	10y. 2m.	2y. 3m.		

TABLE B/12

MATHEMATICS

ACHIEVEMENT INDICES FOR COMBINED SCORES BASIC 'A', 'B', 'C' & DE (MENTAL AGE LESS EDUCATIONAL AGE)

GROUP	NO.	MEAN CHRON. AGE	MEAN MENTAL AGE	MEAN EDUC. AGE	MEAN DIFFER-ENCE MA-EA	't' RATIO	SIGNIF-ICANCE p<
ALL GIFTED	72	8y. 9m.	14y. 2m.	11y. 8m.	2y. 6m.	3.14	.005
ALL CONTROL	64	8y. 8m.	10y. 3m.	8y. 5m.	1y. 9m.		
HIGH IQ SUB GP.	31	8y. 6m.	15y. 2m.	12y. 0m.	3y. 2m.	4.37	.001
LOW IQ SUB GP.	41	9y. 2m.	9y.11m.	8y. 1m.	1y. 9m.		

TABLE B/13

SUMMARY

READING AND ENGLISH

TEST	MAIN GROUPS 't' RATIO	MAIN GROUPS SIGNIFICANCE	MAIN GROUPS DIRECTION OF DIFFER.	SUB-GROUPS 't' RATIO	SUB-GROUPS SIGNIFICANCE	SUB-GROUPS DIRECTION OF DIFFER.
READING: (Quotients $\frac{EA}{MA}$ x100)	0.98	-	Positive	0.40	-	Positive
ENGLISH A2: (Quotients $\frac{EA}{MA}$ x100)	1.00	-	Negative	1.77	p < .1	Negative
ENGLISH B2: " " " "	1.46	p < .2	"	3.48	p < .01	"
ENGLISH C2: " " " "	2.29	p < .1	"	3.37	p < .01	"
ENGLISH D2: " " " "	0.40	-	"	2.71	p < .05	"
ENGLISH SERIES A2, B2, C2, D2, & E2 COMBINED QUOTIENTS $\frac{EA}{MA}$ x 100	2.20	p < .05	"	3.82	p < .001	"
READING: (Indices MA less EA)	0.20	-	Positive	0.76	-	Negative
ENGLISH A2: (Indices MA less EA)	2.26	p < .05	Negative	3.51	p < .01	"
ENGLISH B2: " " " "	2.69	p < .02	"	4.74	p < .001	"
ENGLISH C2: " " " "	3.33	p < .01	"	4.90	p < .001	"
ENGLISH D2: " " " "	1.68	p < .1	"	3.99	p < .01	"
ENGLISH SERIES A2, B2, C2, D2 & E2 COMBINED INDICES MA less EA	4.67	p < .001	"	6.61	p < .001	"

Note: MA = MENTAL AGE EA = EDUCATIONAL AGE p = PROBABILITY

TABLE B/14

SUMMARY

MATHEMATICS

TEST	MAIN GROUPS 't' RATIO	MAIN GROUPS SIGNIFICANCE	MAIN GROUPS DIRECTION OF DIFFER.	SUB-GROUPS 't' RATIO	SUB-GROUPS SIGNIFICANCE	SUB-GROUPS DIRECTION OF DIFFER.
BASIC MATHS 'A':(Quotients $\frac{EA}{MA}$ x100)	-3.53	p<.001	Negative	-5.43	p<.001	Negative
BASIC MATHS 'B': " " "	-0.20	-	"	-0.97	-	"
BASIC MATHS 'C': " " "	+2.35	p<.05	Positive	+1.79	p<0.1	Positive
MATHS DE: " " "	+0.74	-	"	+1.11	-	"
MATHEMATICS SERIES BASIC MATHS 'A', 'B', 'C' & MATHS DE & FG COMBINED QUOTIENTS $\frac{EA}{MA}$ x 100	-0.24	-	Negative	-1.14	p<0.2	Negative
BASIC MATHS 'A':(Indices MA LESS EA)	5.16	p<.001	"	-6.75	p<.001	"
BASIC MATHS 'B': " " "	0.95	-	"	-1.72	-	"
BASIC MATHS 'C': " " "	0.71	-	Positive	+0.01	-	Positive
MATHS DE: " " "	0.46	-	Negative	-0.42	-	Negative
MATHEMATICS SERIES BASIC MATHS 'A', 'B', 'C' & MATHS DE & FG COMBINED INDICES MA LESS EA	3.44	p<.005	"	-4.37	p<.001	"

TABLE B/15

GIFTED SUB-GROUPS ACCORDING TO NOMINATION

EDUCATIONAL QUOTIENTS FOR READING AND ENGLISH LANGUAGE $\left(\frac{EA}{MA} \times 100\right)$

SUB-GROUP NOMINATED BY:	NO.	TEST	MEAN MENTAL AGE	MEAN EDUC AGE	MEAN $\frac{EA}{MA} \times 100$	't' RATIO	SIGNIF-ICANCE p<
1) Teachers	19	A2	11y. 0m.	8y.10m.	81	1,2: -0.69	-
2) Parents & Psy.	8	"	11y. 2m.	9y. 4m.	84.1	1,3: 0.23	-
3) Ex-Controls	7	"	10y. 6m.	8y. 5m.	79.7	2,3: -0.73	-
1) Teachers	5	B2	13y. 9m.	11y. 5m.	82	1,2: +0.68	-
2) Parents & Psy.	9	"	15y. 0m.	11y. 9m.	78.4	1,3: +1.38	-
3) Ex-Controls	2	"	13y. 9m.	10y. 7m.	76.5	2,3: 0.46	-
1) Teachers	7	C2	15y. 5m.	13y. 6m.	87.1	1,2: +2.31	-
2) Parents & Psy.	5	"	17y. 3m.	13y. 3m.	75.6	1,3: 0	-
3) Ex-Controls	1	"	16y.10m.	12y. 0m.	71.0	2,3: 0	-
1) Teachers	12	Reading	10y. 2m.	9y. 0m.	88	1,2: 0.14	-
2) Parents & Psy.	3	"	9y. 8m.	8y. 5m.	87	1,3: 1.72	-
3) Ex-Controls	2	"	9y. 5m.	7y. 8m.	81	2,3: 0.68	-

TABLE B/16

GIFTED SUB-GROUPS ACCORDING TO NOMINATION

ACHIEVEMENT QUOTIENTS FOR MATHEMATICS

$\frac{EA}{MA} \times 100$

SUB-GROUP NOMINATED BY:	NO.	TEST	MEAN MENTAL AGE	MEAN EDUC. AGE	MEAN $\frac{EA}{MA}$ x100	't' RATIO (Not Sign.)	DIRECTION OF DIFFER.
1) Teachers	17	BASIC MATHS'A'	10y. 9m.	8y. 0m.	76	1) 2) -	-
2) Parents & Psy.	8	" "	11y. 4m.	8y. 6m.	76	1) 3) +1.43	Positive
3) Ex-Controls	7	" "	10y. 6m.	7y. 6m.	72	2) 3) +1.11	"
1) Teachers	5	BASIC MATHS'B'	12y.10m.	10y. 5m.	82	1) 2) -0.97	Negative
2) Parents & Psy.	4	" "	13y. 2m.	12y. 0m.	91	1) 3) -0.66	"
3) Ex-Controls	3	" "	13y. 1m.	11y. 6m.	88	2) 3) +0.55	Positive
1) Teachers	7	BASIC MATHS'C'	15y. 9m.	12y.11m.	82	1) 2) -1.02	Negative
2) Parents & Psy.	11	" "	15y. 6m.	13y. 1m.	87	1) 3) -0.97	"
3) Ex-Controls	2	" "	15y. 0m.	14y. 1m.	93	2) 3) -0.52	"
1) Teachers	12	MATHS DE	17y. 7m.	15y. 5m.	87	1) 2) -0.38	Negative
2) Parents & Psy.	8	" "	18y. 2m.	16y. 2m.	89	1) 3) -0.22	"
3) Ex-Controls	4	" "	16y. 9m.	15y. 0m.	89	2) 3) -	-
1) Teachers	3	MATHS FG	19y. 7m.	17y. 1m.	88	1) 2) +1.05	Positive
2) Parents & Psy.	5	" "	18y.11m.	15y. 8m.	83	1) 3) -0.35	Negative
3) Ex-Controls	2	" "	17y. 8m.	16y. 3m.	92	2) 3) -1.13	"

TABLE B/17

GIFTED SUB-GROUPS ACCORDING TO NOMINATION

ACHIEVEMENT INDICES FOR READING AND ENGLISH LANGUAGE (MA less EA)

SUB-GROUP NOMINATED BY:	NO.	TEST	MEAN MENTAL AGE	MEAN EDUC. AGE	MEAN DIFFER MA-EA	't' RATIO	DIRECT-ION OF DIFFER.
1) Teachers	19	A2	11y. 0m.	8y.10m.	2y. 2m.	1 & 2 +0.51	Positive
2) Parents & Psy.	8	"	11y. 2m.	9y. 4m.	1y.10m.	1 & 3 +0.08	"
3) Ex-Controls	7	"	10y. 6m.	8y. 5m.	2y. 1m.	2 & 3 - .41	Negative
1) Teachers	5	B2	13y. 9m.	11y. 5m.	2y. 4m.	1 & 2 - .90	Negative
2) Parents & Psy.	9	"	15y. 0m.	11y. 9m.	3y. 3m.	1 & 3 -1.19	"
3) Ex-Controls	2	"	13y. 9m.	10y. 7m.	3y. 2m.	2 & 3 + .05	Positive
1) Teachers	7	C2	15y. 5m.	13y. 6m.	1y.11m.	1 & 2 -2.41	Negative
2) Parents & Psy.	5	"	17y. 3m.	13y. 1m.	4y. 2m.	1 & 3 -	-
3) Ex-Controls	1	"	16y.10m.	12y.0m.	4y.10m.	2 & 3 -	-
1) Teachers	10	D2	17y. 8m.	14y. 8m.	3y. 0m.	1 & 2 -0.43	Negative
2) Parents & Psy.	6	"	18y. 2m.	14y. 8m.	3y. 6m.	1 & 3 +1.28	Positive
3) Ex-Controls	3	"	16y.10m.	15y. 0m.	1y. 2m.	2 & 3 +1.67	"
1) Teachers	12	Reading	10y. 2m.	9y. 0m.	1y. 2m.	1 & 2 -0.17	Negative
2) Parents & Psy.	3	"	9y. 8m.	8y. 5m.	1y. 3m.	1 & 3 -1.43	"
3) Ex-Controls	2	"	9y. 5m.	7y. 8m.	1y. 9m.	2 & 3 - .56	"

TABLE B/18

GIFTED SUB-GROUPS ACCORDING TO NOMINATION

ACHIEVEMENT INDICES FOR MATHEMATICS

(MA less EA)

SUB-GROUP NOMINATED BY:	NO.	TEST	MEAN MENTAL AGE	MEAN EDUC. AGE	MEAN DIFFER-ENCE MA-EA	't' RATIO	DIRECT-ION OF DIFFER.
1) Teachers	17	Basic 'A'	10y. 9m.	8y. 0m.	2y. 9m.	1) 2) −0.29	Negative
2) Parents & Psy.	8	"	11y. 4m.	8y. 6m.	2y.10m.	1) 3) −0.62	"
3) Ex-Controls	7	"	10y. 6m.	7y. 6m.	3y. 0m.	2) 3) −0.23	
1) Teachers	5	Basic 'B'	12y.10m.	10y. 5m.	2y. 5m.	1) 2) +1.03	Positive
2) Parents & Psy.	4	"	13y. 2m.	12y. 0m.	1y. 2m.	1) 3) −0.52	Negative
3) Ex-Controls	3	"	13y. 1m.	11y. 6m.	1y. 7m.	2) 3) +0.72	Positive
1) Teachers	7	Basic 'C'	15y. 9m.	12y.11m.	2y.10m.	1) 2) +0.54	Positive
2) Parents & Psy.	11	"	15y. 6m.	13y. 1m.	2y. 5m.	1) 3) +1.21	"
3) Ex-Controls	2	"	15y. 0m.	14y. 1m.	11m.	2) 3) +0.91	"
1) Teachers	12	DE	17y. 7m.	15y. 5m.	2y. 2m.	1) 2) +0.21	"
2) Parents & Psy.	8	"	18y. 2m.	16y. 2m.	2y. 0m.	1) 3) +0.31	"
3) Ex-Controls	4	"	16y. 9m.	15y. 0m.	1y. 9m.	2) 3) +0.17	"
1) Teachers	3	FG	19y. 7m.	17y. 1m.	2y. 6m.	1) 2) −0.64	Negative
2) Parents & Psy.	5	"	18y.11m.	15y. 8m.	3y. 3m.	1) 3) +0.49	Positive
3) Ex-Controls	2	"	17y. 8m.	16y. 3m.	1y. 5m.	2) 3) +1.33	"

TABLE B/19

S U M M A R Y

POSITIVE AND NEGATIVE QUOTIENTS AND INDICES FOR SUB-GROUPS NOMINATED BY:

1) TEACHERS:
2) PARENTS:
3) EX-TEACHER-NOMINATED CONTROLS.

TEST	1) TEACHER V 2) PARENT		2) PARENT V 3) EX-CONTROL		1) TEACHER V 3) EX-CONTROL		
	Quotient $\frac{EA}{MA}$	Differ. MA-EA	Quotient $\frac{EA}{MA}$	Differ. MA-EA	Quotient $\frac{EA}{MA}$	Differ. MA-EA	
READING	P	N	P	N	P	N	3P:3N
ENGLISH A2	N	P	N	N	P	P	3P:3N
ENGLISH B2	P	N	P	P	P	N	4P:2N
ENGLISH C2	P	N	-	-	-	-	1P:1N
ENGLISH D2	P	N	N	P	N	P	3P:3N
BASIC MATHS 'A'	-	N	P	N	P	N	2P:3N
BASIC MATHS 'B'	N	P	P	P	N	N	3P:3N
BASIC MATHS 'C'	N	P	N	P	N	P	3P:3N
MATHS DE	N	P	-	P	N	P	3P:2N
	P	N	N	P	N	P	3P:3N
TOTALS	5P:4N	4P:6N	4P:4N	6P:3N	4P:5N	5P:4N	

TABLE B/20

S U M M A R Y

VALIDITY OF NULL HYPOTHESES FOR READING AND ENGLISH

SUBJECT AREA	GROUPS	CALCULATION OF VARIATION OF MEANS OF EAs AND MAs.	NULL HYPOTHESES REJECTED $p < .05$
READING	MAIN	QUOTIENTS	NO
"	"	INDICES (MA-EA)	"
READING	HIGH & LOW IQ	QUOTIENTS	"
"	"	INDICES (MA-EA)	"
ENGLISH A2	MAIN	QUOTIENTS	"
" B2	"	"	"
" C2	"	"	"
" D2	"	"	"
ENGLISH A2	"	INDICES (MA-EA)	YES
" B2	"	" "	"
" C2	"	" "	"
" D2	"	" "	NO
ENGLISH A2	HIGH & LOW IQ	QUOTIENTS	"
" B2	"	"	YES
" C2	"	"	"
" D2	"	"	"
ENGLISH A2	"	INDICES (MA-EA)	"
" B2	"	" "	"
" C2	"	" "	"
" D2	"	" "	"
ENGLISH SERIES (COMBINED)	MAIN	QUOTIENTS	"
" "	"	INDICES (MA-EA)	"
" "	HIGH & LOW IQ	QUOTIENTS	"
" "	" "	INDICES (MA-EA)	"

TABLE B/21

S U M M A R Y

VALIDITY OF NULL HYPOTHESES FOR MATHEMATICS

TEST	GROUPS	CALCULATION OF VARIATION OF MEANS OF EAs AND MAs.	NULL HYPOTHESES REJECTED $p < .05$
BASIC 'A'	MAIN	QUOTIENTS	YES
" 'B'	"	"	NO
" 'C'	"	"	"
" 'DE'	"	"	"
BASIC 'A'	"	INDICES (EA-MA)	YES
" 'B'	"	" "	NO
" 'C'	"	" "	"
" 'DE'	"	" "	"
BASIC 'A'	HIGH & LOW IQ	QUOTIENTS	YES
" 'B'	" "	"	NO
" 'C'	" "	"	"
" 'DE'	" "	"	"
BASIC 'A'	" "	INDICES (EA-MA)	YES
" 'B'	" "	" "	NO
" 'C'	" "	" "	"
" 'DE'	" "	" "	"
MATHS SERIES (COMBINED) 'A', 'B', 'C', 'DE' & 'FG'.	MAIN	QUOTIENTS	NO
" " "	"	INDICES (EA-MA)	YES
MATHS SERIES (COMBINED) 'A', 'B', 'C', 'DE' & 'FG'	HIGH & LOW IQ	QUOTIENTS	NO
" " "	"	INDICES (EA-MA)	YES

TABLE B/22 DIVIDENDS from STANDARDISED ATTAINMENT SCORES DIVIDED BY 1.Qs x 100 for GIFTED and CONTROL GROUPS

	GIFTED GROUP						CONTROL GROUP					
Test	No.	Mean IQ	s.d.	Mean SS	s.d.	Mean Dividend x 100	No.	Mean IQ	s.d.	Mean SS	s.d.	Mean Dividend x 100
READ-ING	17	154	10.2	121	13.9	78.6	16	118	9.5	97	13.1	82.2
ENGLISH												
A.2	34	157	10.9	121	14.1	77.1	32	118	8.5	100	10.2	84.8
B.2	17	160	11.1	127	11.8	79.4	11	115	9.0	100	3.9	87.0
C.2	13	161	12.3	128	8.5	79.5	8	112	14.1	104	3.2	92.9
D.2	19	155	11.0	125	9.9	80.7	13	114	13.0	101	8.3	88.6
MATHS												
'A'	32	158	10.9	121	11.7	77.1	30	118	8.6	95	14.4	80.5
'B'	12	160	10.6	124	12.4	77.5	10	120	6.3	104	7.0	86.7
'C'	21	160	11.2	119	8.0	74.4	17	114	11.7	95	10.0	83.3
'DE'	25	157	11.3	124	10.2	79.0	14	114	12.5	101	13.3	88.6

APPENDIX C

TABLE C/1

CHILDREN'S QUESTIONNAIRE

GENERAL ATTITUDES RELATING TO SCHOOL

(All figures are percentages of total children in the appropriate Group)

Q.1. Do you like school?	Very Much	Quite a lot	Not Much	Not at all 'Hate it'	No Information
Replies: Gifted Gp.	55	32	8	-	5
Control Gp.	55	36	3	4.5	1.5
Q.2. Do you like best?	**Being in classroom**	**In hall for music, film, etc.**	**Playtime**	**After School Clubs**	**No Information**
Replies: Gifted Gp.	25	24	38	6	7
Control Gp.	19.5	26	45	5	5
Q.3. Do you like?	**Class-teaching**	**Table Gp. of 4 or 5**	**Work with one other child**	**Working on your own**	**No Information**
Replies: Gifted Gp.	16	18.5	16	42.5	7
Control Gp.	24	17	20	34	5
Q.3(a) Do you like working so? JUNIORS ONLY	**All time time**	**Some of the time**	**A little of the time**	**No Information**	
Replies: Gifted Gp.	14	74	5	7	
Control Gp.	14	66	11	9	
Q.4 In term-time do you prefer to be? JUNIORS ONLY	**At home**	**At school**	**Somewhere else**	**No Information**	
Replies: Gifted Gp.	9.5	56	23	12	
Control Gp.	29	49	20	3	

Note 1: The figures given under the heading 'No Information' refer to a percentage of the whole sample of 73 Gifted Children, or 64 Average-Bright Children. It is not a percentage of the 93.5% and 98.4% respectively, i.e. of those who actually completed questionnaires.

Note 2: Total Nos. of Juniors in the sample are: Gifted 42, Average-Bright Controls 35.

TABLE C/2 — CHILDREN'S QUESTIONNAIRE — 42 Juniors on Project

(All figures as percentages)

Total children in appropriate Group:

Gifted: 42. Control: 35 - in first question only.

QUESTION:	Are you working on Project?		
	Yes	No	No information
Gifted Group:	67	21	12
Control Group:	74	17	9

QUESTION:	WORK ON PROJECT, DO YOU?					
	Like it Very Much	Quite a Lot	Not Much	Not at all	Hate it	No information
Gifted Group:	29	36	7	0	0	29
Control Group:	23	43	14	0	0	20
Note:	All figures expressed as percentages of those in the appropriate Groups who answered "Yes" in the first question.					

TABLE C/3 — CHILDREN'S QUESTIONNAIRE - SCHOOL CURRICULUM

FIRST CHOICES ONLY FOR PREFERRED SUBJECT AREAS.

SUBJECT AREA	Reading	Creative Writing	Painting & Drawing	Music & Singing	Music & Movement	Maths & Science	Pottery & Craft	Nature Study Proj. Social Studies School TV Free Activ.	Swimming & Outdoor Games	No Information	Max. Poss.
No. Gifted	24.5	5	1	4	13	13	1.5	5	2	16	73
No. Control Group	9	3.5	8	3.5	2	12	4	8	2	12	64
% Gifted	33.6	6.8	1.4	5.5	1.4	17.8	2.1	6.8	2.7	21.9	99.8
% Control	14.1	5.5	12.5	5.5	3.1	18.8	6.3	12.5	3.1	18.8	100.2
Note:	Where two subjects were given the Results are expressed as "0.5 of a child".										

TABLE C/4 CHILDREN'S QUESTIONNAIRES: COMBINED FIGURES FOR THREE SUBJECT AREAS MOST PREFERRED

SUBJECT AREA	Gifted Group No.	Control Group No.	Gifted Group %	Control Group %
Reading	52	30	23.7	15.7
Creative Writing	18	12	8.2	6.3
Painting & Drawing	16.5	20	7.5	10.5
Music & Singing	12	11	5.5	5.8
Music & Movement	3.5	6	1.6	3.1
Maths & Science	38	28	17.4	14.7
Pottery & Craft	3	13	2.3	6.8
Nature Study, Project, Social Studies, School TV, Free Activity.	20.5	24	9.4	12.6
Swimming & Outdoor Games	9.5	11	4.3	5.8
Total Choices Made	175	156	79.9	81.2
No Information	44	36	20.1	18.8
Total Possible Choices	219	192	100	100

TABLE C/5

CHILDREN'S QUESTIONNAIRES

Replies Regarding Friends

QUESTION	No. of Gifted Group	No. of Control Group	% of Gifted Group	% of Control Group
Have you a Special Friend in Your school Class?	42	36.5	57.5	57
Have you a Special Friend Not In your School class?	5.5	5.5	7.5	9
Are you one Of a Group of Friends?	14	17	19	27
Have you no Special Friends among Children?	6.5	1	9	1.6
No information Given	5	4	7	6
TOTALS	73	64	100	100.6

TABLE C/6 CHILDREN'S QUESTIONNAIRE - Choice of Three Home Occupations Preferred.

GROUP	Watching TV	Reading	Writing Stories	Drawing & Painting	Maths & Puzzles	Music	Swimming & Outdoor Games	Looking After Pets	Making Something	No information & Just Playing	Max Poss.
Gifted No.	46	29	5	5	13	13	35	13	14	44	219
Control No.	45	14	3	12	3	12	40	15	8	40	192
Gifted %	21.2	13.4	2.3	2.3	6	6	16.1	6	6.5	20.3	100
Control %	23.4	7.3	1.6	6.3	1.6	6.3	20.8	7.8	4.2	20.8	100

Comparison: Almost identical between two groups.	TV	46 and 45
	Music	13 and 12
	No. infor.	44 and 40
Proportionately more Gifted Children.	Reading	29 : 14
	Writing Stories	5 : 3
	Maths & Puzzles	13 : 3
	Making Something	14 : 8
Proportionately Fewer Gifted Children.	Drawing & Painting	5 : 12
	Swimming & Outdoor Games	35 : 40
	Looking After Pets	13 : 15

TABLE C/7 POSITION IN FAMILY

Position in family	Gifted Group No.	Control Group No.	Gifted Group %	Control Group %	't' Ratio	Significance p<
First born	40	23	55	36	4.15	0.04
2nd born	20	19	27	30		
3rd born	8	12	11	19		
4th born	2	2	3	3		
No information	3	8	4	12.5		
TOTAL	73	64	100	100.5		

TABLE C/8 PARENTS' VIEW OF CHILD'S LIKING FOR SCHOOL

Parental View	Gifted Group No.	Control Group No.	Gifted Group %	Control Group %	Chi Sq.	Significance p<
Very much	47	31	64	48	2.91613	0.1
Fairly well	19	22.5	26	35		
Not much	5	5.5	7	9		
Not at all	0	0	0	0		
Hates it	0	0	0	0		
Don't Know	0	0	0	0		
No information	2	5	3	8		
TOTAL	73	64	100	100		

TABLE C/9 PARENTS' VIEWS: CHILD'S PREFERRED PART OF SCHOOL DAY (in 'CHOICE-UNITS)

GIFTED GROUP	Working in Class-Room	Hall for Music, Singing, Drama, Film etc.	Play-Time	Sport and/or swimming	After School Clubs in School	Total Choice Full Units
Preferred part of school day	16.88	12.20	15.25	11.90	3.73	59.96
Most Preferred part of school day	4.77	1.03	2.08	2.08	0.33	10.29
TOTAL OPTIONS	21.65	13.23	17.33	13.98	4.06	70.25
CONTROL GROUP						
Preferred part of school day	11.80	8.10	14.88	9.13	1.10	45.01
Most Preferred part of school day	2.42	1.25	3.83	3.58	0	11.08
TOTAL OPTIONS	14.22	9.35	18.71	12.71	1.10	56.09
GIFTED GROUP %	30.81	18.83	24.66	19.90	5.77	100
CONTROL GROUP %	25.35	16.66	33.35	22.66	1.96	100

Note: Missing Information

GIFTED GROUP: No Quest. returned for two children.
No reply to this question on one form.

CONTROL GROUP: No Quest. returned for five children.
No reply to this question on three forms.

TABLE C/10 CHILDREN'S CURRICULUM AREA LIKES ACCORDING TO THEIR PARENTS

CURRICULUM AREA	GIFTED GROUP			CONTROL GROUP			% GIFTED GROUP			% CONTROL GROUP		
	Emphatic Likes	Other Likes	Total Likes	Emphatic Likes	Other Likes	Total Likes	Emphatic Likes	Other Likes	Total Likes	Emphatic Likes	Other Likes	Total Likes
Reading	30	35	65	18	25	43	23	10	13.74	19	10	12.28
Creative Writing	14	30	44	7	22	29	11	9	9.3	7.5	9	8.28
Maths	26	32	58	7	22	29	20	9	12.26	7.5	9	8.28
Project	13	37	50	13	27	40	11	14	10.57	15	14	11.43
Social Studies	1	12	13	1	10	11	11	14	2.74	15	14	3.14
Free Activity	6	25	31	1	27	28	5	7	6.55	1	10.5	8
Painting	6	38	44	6	36	42	5	11	9.3	6.5	14	12
Pottery	3	27	30	4	16	20	3	12.5	6.34	6.5	13	5.7
Craft & Needlework	1	16	17	2	18	20	3	12.5	3.59	6.5	13	5.7
Music & Singing	11	31	42	11	20	31	9	9	8.87	12	8	8.8
Music & Movement	3	28	31	4	11	15	2	8	6.55	4	4	4.3
Outdoor Games & Sport	14	34	48	19	23	42	11	10	10.14	20	9	12
Total	128	345	473	93	257	350	100	99.5	100	99	100.5	100

NOTES RELATING TO TABLE C/10

Total likes possible for Gifted Group:		71 x 12 = 852
" " stated " " "		= 473
Total likes possible for Control Group:		59 x 12 = 708
" " stated " " "		= 350
Ratio of stated to possible likes:	Gifted Group:	1 : 1.80
" " " " " "	Control Group:	1 : 2.01
" " emphatic " " "	Gifted Group:	1 : 6.66
" " " " " "	Control Group:	1 : 7.61

TABLE C/11 (a) PARENTAL ASSISTANCE WITH CHILD'S SCHOOL WORK

TEACHING OUTSIDE SCHOOL (Regularly about one hour per week)	TEACHING HOURS				% TOTAL HOURS			
	GIFTED GROUP		CONTROL GROUP		GIFTED GROUP	CONTROL GROUP	CHI-Sq. Test	Significance p
	Possible	Given	Possible	Given				
Reading	71	6.2	59	15	8.73	25.42	6.57	.05
Handwriting	71	2.2	59	8	3.09	13.55	4.87	.05
Composition of stories	71	1.2	59	7	1.69	11.86	5.64	.05
Spelling	71	5.2	59	12	7.32	20.33	4.75	.05
Maths	71	3.2	59	9	4.50	15.25	4.38	.05
TOTAL	355	18	295	51	17.12	17.28	25.34	.001

TABLE C/11 (b) PARENTAL ASSISTANCE WITH CHILD'S SCHOOL WORK

TEACHING OUTSIDE SCHOOL (Occasionall about ½ hour per month)	TEACHING ½ HOURS				%			
	GIFTED GROUP		CONTROL GROUP		GIFTED GROUP	CONTROL GROUP	CHI-Sq. Test	Significance p
	Possible	Given	Possible	Given				
Reading	71	2	59	18	2.81	30.5	16.90	.001
Handwriting	71	6	59	9	8.45	15.25	1.46	None
Composition of Stories	71	3	59	5	4.22	8.47	1.00	None
Spelling	71	9	59	17	12.67	28.81	5.24	.05
Maths	71	10	59	15	14.08	25.42	2.66	.15
TOTAL	355	30	295	64	8.45	21.69	21.788	.001

TABLE C/12

PARENTAL HELP GIVEN ON SCHOOL WORK

(Other Than Teaching)

Specific Help:	GIFTED CHILDREN No.	%
Reading	2	
Spelling	3	
Maths & Science	3	
Maths & Eng. Work-Books	1	
Latin 1 hour p.w.	1	18.3
Stimulation for School Entrance Exam	1	
Check Homework	2	
General Help:		
General encouragement in school subjects	22	
Assistance with Project	11	
General advice and encouragement	6	
Mental Arithmetic as a game	1	67.6
Answer questions	3	
Discussion	2	
Help find out	3	

Specific Help:	CONTROL CHILDREN No.	%
Reading	1	8.5
Homework	4	
Possibly Specific Help:		
Help given when necessary	6	10.2
General Help:		
Assistance with Project	12	
Help when asked	9	
Encouragement	2	
Explain things	1	
Keep supplied with reading and art equipment	1	45.8
Visits to museums, advice on books	1	
Bed-time story nightly	1	

No. of Parents providing help	61	85.9
No. Replying 'No'.....	6	8.5
No. not replying	4	5.6
Total	71	100.0%

No. of Parents providing help	38	64.5
No. Replying 'No'	13	22.0
No. not replying	8	13.5
Total	59	100.0%

TABLE C/13 PARENT VIEWS ON THEIR CHILDREN'S SOCIAL RELATIONSHIPS (1)

	QUESTION						
	Does your child have a particular friend		Is your child one of a group of friends	Has he/she no child friends	Don't Know	No Information	TOTAL
	At school	Elsewhere					
GIFTED GROUP Replies: No.	16	4	44.5	5.5	0	3	73
CONTROL GROUP Replies: No.	14	4	38	2	1	5	64
GIFTED GROUP %	22	5.5	61	7.5	0	4	100
CONTROL GROUP %	22	6	59	3	2	8	100

NOTE: One parent ticked two options. Accordingly 0.5 has been entered under each of the two headings concerned.

TABLE C/14 PARENT VIEWS ON THEIR CHILDREN'S SOCIAL RELATIONSHIPS (2)

	QUESTION							
	Does your child prefer to be with:							
	Children of his/her own age	Children one year or more older	Children one year or more younger	Adults	Dont Know	Very Variable	No Information	TOTAL
GIFTED GROUP Replies: No.	21.5	20.5	3	1	4	18	5	73
CONTROL GROUP Replies: No.	32.5	8.5	1.5	2	0	12.5	7	64
GIFTED GROUP %	29.5	28	4	1	5.5	25	7	100
CONTROL GROUP %	51	13	2	3	0	19.5	11	99.5

NOTE: Where parents have ticked two options, 0.5 has been entered under each of the two headings concerned.

TABLE C/15 PARENTS' REPLIES CONCERNING CHILDREN'S HOME OCCUPATIONS

GIFTED GROUP

ACTIVITY	Main Interest		Other Interest	
	No.	%	No.	%
Watching TV	16	14.5	50	14.6
Reading	30	27.3	37	10.48
Making Something	17	15.5	38	10.77
Creative Writing	3	2.7	23	6.52
Drawing & Painting	4	3.6	31	8.78
Looking After Pets	1	1.0	23	6.52
Doing Puzzles	4	7.3	33	9.35
Mathematical Puzzles	4		20	5.67
Music	3	2.7	34	9.63
Dancing	1	2.7	19	5.38
Drama	2		17	4.81
Swimming & Outdoor Games, Sport.	25	22.7	28	7.93
TOTAL	110	100	383	100

CONTROL GROUP

ACTIVITY	Main Interest		Other Interest	
	No.	%	No.	%
Watching TV	17	20	38	15
Reading	11	13	32	13
Making Something	8	9.5	39	16
Creative Writing	2	2	14	6
Drawing & Painting	3	4	27	11
Looking After Pets	2	2	26	10
Doing Puzzles	1	1	22	11
Mathematical Puzzles	0		5	
Music	6	7	13	5
Dancing	3	4	8	6
Drama	0		7	
Swimming & Outdoor Games, Sport.	31	37	18	7
TOTAL	84	99.5	249	100

Note: Total Recordable 'Main Interest' for Gifted Group 71x12=852
Total Enumerated " " " " " =110
Ratio of Enumerated to Recordable 'Main Interests'
Gifted Group 1 : 7 .74
" " " " " 'Main Interests'
Control Group 1 : 8 .42

TABLE C/16 PARENTS' REPLIES REGARDING EXTENT OF CHILDREN'S HOME ACTIVITIES

ACTIVITY	No Undertaking Activity		% of Max of 71 children	% of Max 05 59 children	DIFFERENCE BETWEEN PROPORTIONS OF MAX	
	GIFTED GROUP	CONTROL GROUP	GIFTED GROUP	CONTROL GROUP	CHI-Sq. Test X2=	Signif-icance p
Watching TV	66	55	92.6	93.2	0	-
Reading	67	43	94.36	72.9	11.12	.001
Making Something	55	47	77.5	79.7	.09	-
Creative Writing	26	16	36.6	27.1	1.32	-
Drawing & Painting	35	30	49.3	50.8	.03	-
Looking after Pets	24	28	33.8	47.5	2.5	-
Doing Puzzles	37	23	52.1	39.0	2.5	-
Mathematical Puzzles	24	5	23.8	8.5	24.81	.001
Music	37	19	52.0	32.2	5.20	.05
Dancing	20	11	28.2	18.6	1.6	-
Drama	19	7	26.8	11.9	4.46	.05
Swimming & Outdoor Games Sport	53	49	74.6	83.1	1.34	-
TOTAL	463	333	% of 852 Total Max 54.34	% of 708 Total Max 47.0	8.26	.01

NOTE: Ratio of Enumerated to Maximum Recordable Interests:

Gifted Group: 463 : 852 = 1: 1 . 84

Control Group: 333 : 708 = 1: 2 . 13

TABLE C/17 TYPES OF PLAY

CATEGORY	GIFTED GROUP	CONTROL GROUP
1) Imaginary	Dressing-up, Making Plays, Historical, Schools, Shops, Dolls, Toy Soldiers.	Play Battles with Toy Soldiers Dressing-up, Families, Schools, Spies and Space, Inventing, Talking with friends.
2) Environment	Gardening, Nature Study, Feeding Birds Daily, Bird-Watching, Insects, Fishing, Streams, Fossils.	Gardening, Bird-Watching, Natural History, Fishing, Walking and Exploring, Care of Dog, Hamster, Tortoises.
3) Technical	Aircraft Models, Meccano, Dynamic performance of paper darts, Making Electrical Gadgets, Making Elaborate Road Systems, Construction, Science and Technology, Photography.	Model-aircraft building, Building with bricks, playing with cars, lorries, road-works, building sites.
4) Categorisation	Stamp-collecting with use of Catalogues, Road Signs, Intellectual use of Time-tables and maps.	Collecting stamps, flowers, stories, identification of animals, birds, insects, bones. Drawing Maps.
5) Music	Playing Records.	Play Records, Singing, Anything Musical.
6) Indoor Games	Lego, Monopoly, Scrabble, Chess, Draughts, Jig-Saws, Origami, Spirography, Playing cards, Drawing, Painting, Kit-painting, Reading Comics, Table-tennis.	Lego, Monopoly, Jig-Saws, Cleudo, Origami, Card Games, Drawing, Painting, Scrapbooks, Using glue, Cardboard, Sello-tape etc. Cutting-out, making dolls clothes, gymnastics, Badminton.
7) Outdoor Activities	Football, Tree-Climbing, Adventure Games, Scouts, Guides, Tennis, Swimming, Cycling, Horse-riding.	Football, Tree-Climbing, Climbing-frame, Adventure Playground, Sand-pit, Scouts, Cubs, Brownies, Swimming, Cricket, Sports Activities, Ball Games, Chasing Games, Skipping, Bike, Horse-riding, Building Houses, Camps & Dens, Camping, Boating.
8) Intellectual	Debating Society, Discussion Group, Reading History books, Reconstructing 2nd World War Battle Scenes. "Very little time playing. Concentrating on thinking on book he would like to write". "Reading, studying and thinking on his current pet subjects".	Historical things, Making little books, Writing Stories.
9) Working	Shopping.	Mending Electric Plugs, Household Maintenance, Looking after small children, Cooking, Helping in shop, Doing small jobs to get money.

TABLE C/18 VARIOUS COMMENTS BY PARENTS

(1) Child's Personality and General Characteristics	
GIFTED GROUP	CONTROL GROUP
Extrovert, bossy, rarely bored.	Talks readily to herself and strangers. Expressive in movement and music.
Very sociable with all ages: likes conversation.	Mainly interested in playing with others.
An all-round personality with a lively interest in most things.	Needs other's company.
Enjoys most things, very helpful at home.	Likes afternoons and evenings best with group of friends; does not like being alone.
Enthusiastic about everything undertaken.	Has great ability to concentrate - impatient with those who are not quick.
Lovable, demanding, excitable, agile, sleepless.	Thoroughly enjoys all aspects of life.
Always occupied, reliable.	Friendly nature, gets on with all ages.
Likes to organise.	Likes activity.
Enquiring disposition.	Untidy.
Enjoys 'research'.	Reads sports' pages of newspaper.
Impatient of expression in practical form.	Likes doing nothing specific; prefers children one year older.
Likes to be on his own - gets on with people of all ages.	Seldom initiates play, but is an enthusiastic follower.
Capable, very critical of others.	Quiet and self-contained; does not tell about school.
Home and school kept separate, parents told little of school interests.	A quiet child with plenty of patience.
Basically a loner, but flexible.	Enjoys his own company.
A quiet, serious child.	A shy boy who needs pushing.
Prefers own company.	Reticent and dreamy.
Slightly introverted.	
Easily bored.	
No class friends.	

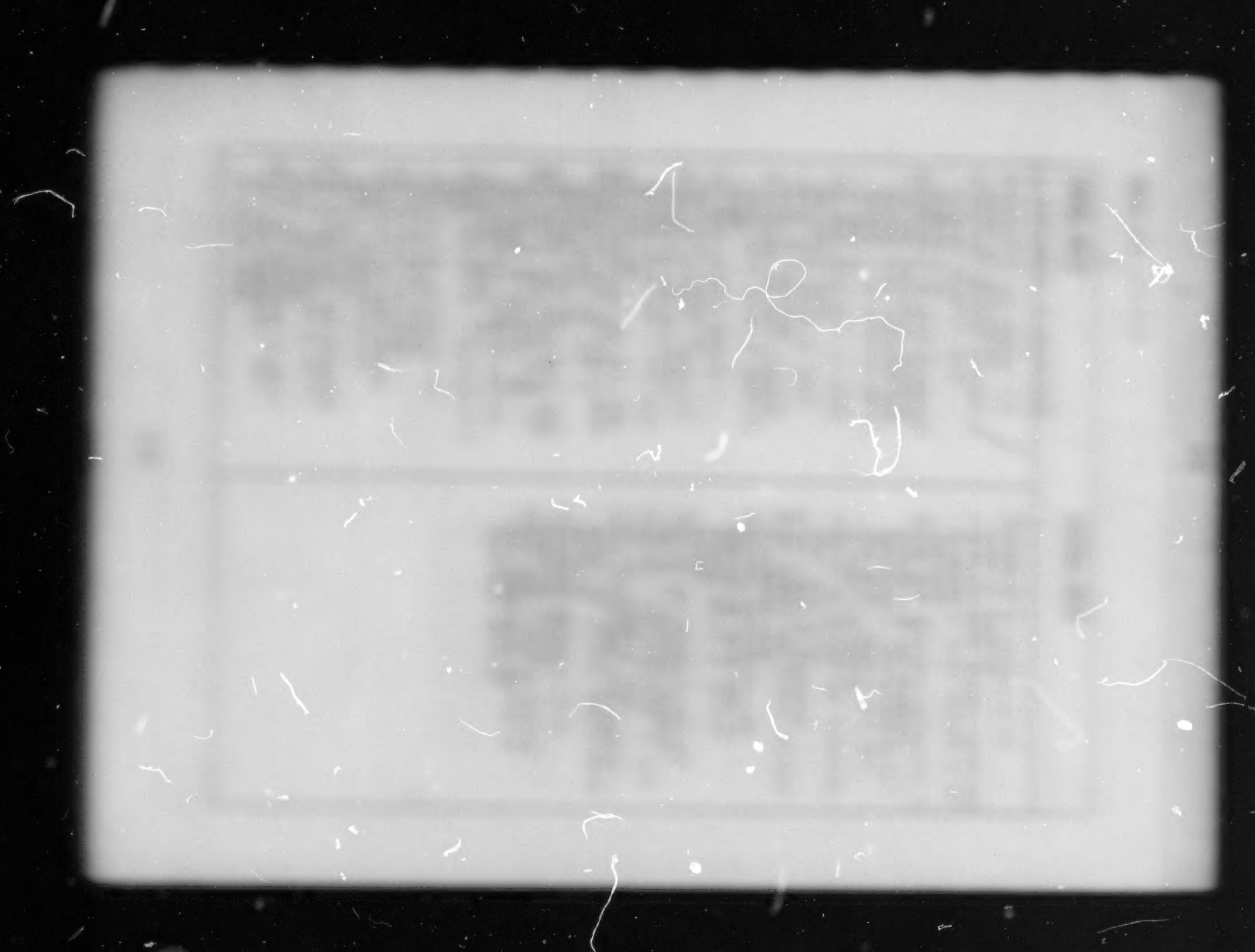
TABLE C/18 continued.

(2) Social and Psychological Adjustment	
GIFTED GROUP	CONTROL GROUP
Likes helping at home.	Settling down after frequent changes in school - parents in Forces.
School best part of day.	Likes teacher's individual attention.
Was unhappy at school, but now happy.	Holds back if not sure is right.
Content to go to school but usually would prefer to stay at home.	A feeling that the teacher picks on him has deterred him from going to school.
School curriculum comes nowhere near needs.	Likes to work on his own.
Regular tantrums.	Likes to play alone.
(3) Physical Circumstances	
GIFTED GROUP	CONTROL GROUP
Eats and drinks well.	Adopted.
Adopted.	Diabetic.
One parent.	Asthma.
Asthma.	Grandparent dying in house with terminal disease.
Unusually clumsy - difficulty in co-ordinating hand and eye.	
Physical action of writing difficult.	
Brain damage at birth.	

TABLE C/18 PARENTS' UNSOLICITED COMMENTS ON CHILD'S PREFERRED MANNER OF WORKING (or PLAY

		GIFTED CHILDREN	CONTROL CHILDREN
1)	Isolates:		
	Prefers to do school-work on own	3	2
	Prefers own company	3	-
	Prefers to play alone	-	1
2)	Teaching method:		
	Prefers teacher teaching whole class ,,,	-	9

SUMMARY
TABLE C/19

DIFFERENCES BETWEEN QUESTIONNAIRES RETURNED BY PARENTS OF THE GIFTED AND CONTROL GROUPS

GIFTED CHILDREN	CONTROL CHILDREN
Physical: 55% were first-born children. 60% enjoyed very good health and 63% were absent a week or less during three school terms.	Physical: 36% and 30% respectively were first-born and second born, and another 19% third-born children. 31% had very good health and 58% were absent a week or less during three school terms.
School: 64% were reported to like school very much and another 26% fairly well. The most preferred part of the school day was said to be working in the classroom for 31% and play-time for a further 25%. 6% enjoyed after school clubs.	School: 48% were said to like school very much and another 35% fairly well. 33% were said to prefer play-time most during the school-day, another 25% to favour working in the classroom and 23% sport or swimming. Only 2% were reported to like after school clubs.
Curriculum: One of the 3 R's was named for 53% of the 'emphatic likes' of the children. All the other subject areas were named but the proportions were smaller than in the case of the Control Group with the exception of Free Activity where the low figure of 5% was the larger.	Curriculum: One of the 3 R's was quoted as an 'emphatic like' in 34% of the nominations. All the remaining curriculum areas were named proportionately more frequently than in respect of the Gifted Group with the exception of Free Activity where the proportion was 1%
For additional 'other likes' the 3 R's received 28% of the nominations.	Under 'other likes' the 3 R's were also given 28% of the nominations.
All the other alternatives are named, the proportions being similar to those for the Control Group with the exception of Music & Movement which received 8% of the nominations.	Painting is named most frequently with 13% of the nominations. Free Activity received 11%, Music & Movement obtained the low figure of 4%. The proportions for the remaining options are either identical or similar for the two groups.
Home Teaching: Some home teaching was provided on the 3 R's by 30% of the parents either regularly or occasionally.	Home Teaching: 66% of the parents provided some extra teaching, either on a regular or occasional basis for one or more of the 3 R's.
Other help: 86% of the parents assisted their children with projects, answering questions, books and visits.	Other help: 65% of the parents assisted their children with projects, answering questions, libraries, visits and homework.